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National Tax Journal

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SOME COMMENTS ON TAX BURDEN COMPARISONS

GERHARD COLM AND HASKELL P. WALD *

MUSGRAVE and his associates define what they regard to be the significance of their tax burden analysis as follows: "The question who pays the taxes must be answered if taxes are to be raised in accordance with the public's idea of distributional justice and the maintenance of sound economic conditions." [1] The Temporary National Economic Committee study, *Who Pays the Taxes?*, which approached the same problem in 1940, started with the following sentence: "The distribution of the tax burden among people of various income brackets is an essential criterion not only of the justice of the tax system, but also of its economic efects." [2] Tax burden analyses are designed as an aid in the formulation of tax policy. Neither Musgrave's original study nor the TNEC study drew any express conclusions from the findings for tax policy. Nevertheless, both studies aroused a passionate discussion—apparently of technical statistical details. In reality, some of the criticism was aimed at the policy conclusions which were thought to be implied in the presentation of the findings. This is a case in which, in the eyes of many people, "the figures speak for themselves." Thus the conclusions are fought by pointing out weaknesses in technical details of the computations.

The investigations by Musgrave and his associates, and the debate between them and Tucker, have contributed greatly to obtaining a better knowledge of the facts of tax burden distribution. As Musgrave observes, the essential differences between his results and Tucker's are in the use of different income concepts, rather than in the distribution of tax payments. The important points of disagreement have been narrowed down to a relatively few issues. As a result of Musgrave's careful experimentation with alternative assumptions as to tax shifting, we have a better notion of how the choice among alternatives is likely to affect the end results.

In these comments we do not intend to contribute directly to the debate between Musgrave and his colleagues, and his critics. We only want to suggest further factors which should be considered when tax burden analyses are used for deriving policy conclusions.

* The authors are on the staff of the Council of Economic Advisers to the President. The views expressed are those of the authors and do not necessarily reflect the official views of the Council.

[1] R. A. Musgrave, J. J. Carroll, L. D. Cook, and L. Frane, "Distribution of Tax Payments by Income Groups: A Case Study for 1948," *National Tax Journal*, IV (March, 1951), p. 1.

[2] G. Colm and H. Tarasov, *Who Pays the Taxes?*, Monograph No. 3 (Washington: Temporary National Economic Committee), 1940.

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General Characteristics of the Tax Burden Curve

If one studies the technical debate around the TNEC study of ten years ago, and the present discussion around Musgrave's article, one reaches the conclusion that some of the criticism was valid in each case, but that, after recomputing the estimates in the light of the criticism, the results are not essentially changed.[3]

The main result of these studies, which we believe cannot be basically challenged, is that the relative tax burden, that is, taxes paid in relation to income before taxes, is approximately proportional in the income brackets which include the bulk of the population. Substantial progression exists only for the relatively small number of income receivers in the higher brackets.

There is controversy about the question whether families in the very lowest brackets actually bear a higher ratio of taxes than those in the middle income brackets. The TNEC study showed a slight regression at the left end of the curve. Musgrave's original study for 1948 showed an even more pronounced regression. This was due, however, to the fact that he related taxes only to *money* income, while the TNEC study included imputed values for the most important incomes in kind. Under the procedure followed by Musgrave, the regression at the lower end of the curve disappears for 1948 when the broader income concept is used. As explained below, the disappearance of the U-shaped feature of the effective rate curve may be due to the faulty treatment of nonmoney income. Some regression must always be present, because some tax is paid even when there is no income, and the effective tax rate is certain to be extremely high for persons with very low incomes. The progression in the higher brackets has become more pronounced from 1938 to 1948.[4]

Irrespective of the question of regression in the lowest income bracket, it remains true that the curve of income distribution does not agree with our general notion of what a just tax distribution should look like. Taxpayers in income brackets which are either exempt from the federal income tax, or which pay only a low effective rate, carry such a heavy relative load in indirect taxes, real estate taxes, and payroll taxes (if these are included) that the progressivity of income taxes is largely offset, as far as the lower and middle brackets are concerned.

Thus the mere shape of the tax burden curve appears to suggest a policy conclusion, namely, that greater equity could be achieved if some part of the tax load were to be shifted from those in the lowest to those in higher income brackets. Specifically, the presentation of a tax burden curve has each time been interpreted as an argument against the imposition of a general sales tax.

But before drawing definite conclusions for tax policy, it is necessary to consider the prevailing budgetary and economic circumstances. This can be

[3] Helen Tarasov, *Who Does Pay the Taxes?*, Supplement IV, *Social Research*, New York: New School for Social Research, 1942. See also, R. A. Musgrave and L. Frane, "Rejoinder to Dr. Tucker," in this issue of the *National Tax Journal*.

[4] The appearance of progression in the higher brackets depends largely on the breakdown used for income in those brackets. A "$7,500 and more" classification gives, of course, a lesser progression than a classification which defines the highest income group, for instance, as "$25,000 and more." A classification of spending units by quintiles or deciles appears to be the most "objective" classification because each unit on the scale reflects an equal number of units which bear the indicated tax burden.

illustrated by pointing out the different types of policy conclusions which could be drawn from the same tax burden analysis in a depression and in a defense or war program.

The Significance of Tax Burden Comparisons in Depression and Defense Periods

It might be useful to remember the conditions under which the TNEC study was initiated about 12 years ago. The United States economy was emerging from a deep depression, thanks largely to a series of emergency policies. There was the conviction that more lasting reforms in the structure of the American economy would be needed in order to move from a recovery to a prosperity period without the danger of a relapse as soon as emergency measures were abandoned. Among many other questions, it was also asked to what extent tax reform could contribute to increasing the stability of the American economy. There was a general feeling abroad that any measure that would strengthen mass consumption would be desirable. Some economists had suggested that lowering the tax burden for those in the lowest brackets, and correspondingly increasing the tax burden of those in the higher brackets, might strengthen mass purchasing power and might increase the stability of the economy. The study *Who Pays the Taxes?* was undertaken in order to provide facts which could be used as a basis for the discussion of such tax reforms. The Final Report of the Executive Secretary of the TNEC discussed the findings of the study in these economic terms.[5]

Before the TNEC studies were completed, however, the situation changed fundamentally. The Final Report of the Executive Secretary of the TNEC was published shortly after the defense program got under way. The defense program created a situation in which rising government expenditures were to be expected, and the question of additional taxes had to be examined. Tax measures were now no longer viewed as a means of supporting mass purchasing power but as measures to curtail mass purchases and to counteract the threat of inflation. In connection with the discussion of the TNEC study there was a sympathetic consideration of the use of some sort of mass consumption tax for financing defense or war expenditures after full employment had been achieved and inflationary pressures had to be fought.[6]

It is also significant that, soon after the defense program got under way, efforts were made by the administration to persuade state and local governments *not* to reduce their taxes in spite of the fact that the tax burden studies indicated that state and local taxes were the main reason for the regressivity in the lower income range. It was recognized that long-run equity considerations and immediate economic considerations were no longer in accord and greater weight was given to the immediate economic considerations.

The conflict between the two sets of considerations is more apparent than real. If one looks just at the curve shown in the tax burden studies, and

[5] *Investigation of Concentration of Economic Power*, Final Report of the Executive Secretary, Senate Committee Print, 77th Cong., 1st sess., March 15, 1941, p. 378 ff.

[6] *Investigation of Concentration of Economic Power, op. cit.*, p. 358 ff. Here it says: "The most effective means of raising revenue under conditions of full utilization of productive facilities is to impose additional taxes on the broad body of consumers."

then suggests that because of economic considerations in a specific period regressive taxes should not be reduced, and that additional taxes which fall on mass consumption should possibly be added, it appears that equity considerations are sacrificed for the sake of economic considerations. This, however, is not the full story and indicates why single curve tax burden comparisons are misleading as a basis for policy consideration in a situation of rising expenditures. Policy decision is always a matter of choosing among alternatives. Therefore, *one* curve, *per se*, is never an adequate basis for suggesting a legitimate policy conclusion. There must be at least two curves, if not more, which demonstrate the implications of alternative policies.

The one-curve presentation is most meaningful under conditions of relatively stable expenditures. The one curve really is related in the reader's mind to an " ideal " line of distribution. This is likely to be a line representing a progressive burden distribution. The deviation of the actual curve from the " ideal " curve suggests the shift in the distribution of the tax burden that is held desirable.

In a situation of rising expenditures, the alternative is not likely to be a different distribution of the same tax burden, but rather the possible imposition of additional taxes, or the impact of inflationary or noninflationary deficit financing. One of the alternatives which should be examined in such a situation is the burden that inflation imposes on various income brackets, compared with the burden that various additional taxes impose on the same people. Even some of our regressive taxes are more equitable than the impact of inflation.

There is, of course, a certain danger in justifying continuation or adoption of regressive taxes by saying that the alternative would be inflation, the worst method of distributing the burden from an economic and social aspect. Even under conditions of full utilization of all resources, it is not always true that the only alternative to meeting expenditures by taxation is inflation. It is also not sufficient to qualify such a statement by saying that inflation may occur either as open or " suppressed " inflation. The term " suppressed " inflation suggests that during a war or defense program spending is limited by the unavailability of goods and by price controls, but that the resulting high rate of saving represents merely a postponement of purchases. Then the money would be spent as soon as goods again become available or when prices are permitted to rise. Actually, the World War II experience shows that a large part of those extraordinary savings became assets which the owners were later reluctant to liquidate except under extraordinary circumstances. To the extent that extraordinary savings may later come to be regarded as part of the normal lifetime savings, there exists the possibility of noninflationary debt financing, even in a period of full utilization of resources.

Nevertheless, a reduction in state and local taxes during the World War II period would have increased disposable income, and would have resulted in aggravating open or repressed inflation. There was no practical possibility of further increasing other more desirable taxes as compensation for a reduction in state and local taxes. Therefore, we think it was correct to argue that continuation of these taxes was the lesser

evil, compared with the economic and social consequences of more inflationary pressure which would have resulted from their reduction.

The need to control inflation is no argument to adopt regressive taxes, but it is an argument to adopt taxes that cut into the buying power in those classes where most of the buying power is.[7] The anti-inflationary impact of taxes does not require taxes on families with incomes below $2,000 or $3,000 who are, to a large extent, the people especially hard hit by the rise in the cost of living.[8]

The Impact of Taxes and Expenditures

Both in the studies published in 1940 and in 1951, it was mentioned that a burden analysis is incomplete if it does not take into consideration the impact of changes in expenditures; from then on, however, the expenditure aspect is neglected. In a relatively stable situation, it is justified to focus on tax revision without considering the effect of changes in expenditures and in the level of taxes. In a situation of rapidly rising expenditures and the need for additional taxes, such a presentation can only be a first step and must be supplemented by further steps before policy conclusions can be drawn.

Some of the differences between tax discussions in Europe and in this country can be explained by the greater emphasis on expenditure policy in the consideration of tax policy in Europe. It is significant, for instance, that some of the labor movements have not shown the same hostility toward the imposition of broad mass taxes which has been expressed in this country. Labor in Europe often felt that the most urgent need was the improvement in the social services of the government. If these services were to be financed solely by progressive income and profit taxes, the limit would soon be reached where resistance against further increases in those services would become insurmountable. It appeared better to accept less desirable taxes if that was the price which had to be paid for further expansion of desired social services.

Similarly, the social security system in this country was certainly accepted more readily because it was adopted largely in the form of social insurance, with much of the contributions being paid by the same groups of people who are also the beneficiaries.[9] Families in the lower income brackets may benefit more from a social expenditure program financed by a less desirable tax than by the adoption of an inadequate program financed by a progressive tax.

Consideration of the impact of expenditures on the income of the taxpayers becomes particularly important in periods of defense or war when the

[7] "The additional revenue, for maximum anti-inflationary effect, should be derived largely from groups in the $3,000 to $10,000 income brackets." *Inflation Still a Danger*, by the Staff of the Joint Committee on the Economic Report, p. 10 ff. (82d Cong., 1st sess.), Senate Report 644, August 15, 1951.

[8] For a passionate and intentionally one-sided plea, see Theodore Kreps, *Taxes and the Human Factor*, The Public Affairs Institute, Washington, D. C., July, 1951.

[9] We do not agree with Musgrave when he says (footnote 1, p. 2 and p. 7 of initial study) that transfer payments should really be regarded as negative taxes, nor with Tucker when he wants to exclude the payroll taxes from the tax comparison. By the same token, also, many of the taxes paid by people in the higher income brackets are used to finance services which are for the benefit, broadly speaking, of the same groups who pay the taxes. Only in the case of tax refunds or reimbursable taxes would we use the term "negative taxes." In all other cases, we should consider the impact of both the tax payments and the benefit receipts, but the net benefit or net burden even for one specific group is not adequately measured by the excess of receipts over payments or of payments over receipts.

rise in expenditures is very substantial. The impact of the $15 billion additional federal taxes imposed since the outbreak of hostilities in Korea would have been quite different if incomes had remained stable during that period. Actually, disposable personal income (i.e., personal income after taxes) rose from a seasonally adjusted annual rate of $197 billion before Korea to $228 billion in the fourth quarter of 1951. Even after adjusting these dollar figures for the price rise, there still remains a rise in real disposable income over that period, in spite of the heavy tax increases. No analysis of the impact of these additional defense taxes would be meaningful which did not take into account the rise in incomes that resulted directly and indirectly from the same defense program.

In the Midyear Economic Report of the President of July, 1951,[10] an attempt was made to appraise the effect of the post-Korean increases in federal individual income tax rates (including those proposed by the Secretary of the Treasury at the beginning of 1951) on rising incomes.

> A family of four with a $3,000 income would have paid $54 in Federal income taxes before Korea. If we assume a 15 per cent rise in income, this family would have $3,450 before payment of taxes, and, under the proposed rate increases, its tax liability would rise to $175 (compared with $121 under the rates in effect before Korea). The family's income after [federal income] taxes, therefore, would be $3,275 or $329 more than what it had before Korea when both income and taxes were lower. In other words, the assumed rise of 15 per cent in income before taxes would mean a rise of 11.2 per cent in income after taxes for this family.[11]

This gives, of course, quite a different picture than saying that the post-Korean federal income taxes take 5 per cent out of a $3,450 family income, compared with 3½ per cent at pre-Korean tax rates. Both statements are true, but both must be considered in policy evaluation.

The aggregate or average approach to tax burden analysis could be greatly refined by an analysis of what happens to families in various income brackets, both on account of rising income and rising taxes. The impact of the expenditure program does not affect incomes of all types and in all brackets in the same way. Therefore, it would be desirable if the impact of the program and of taxes could be analyzed by income types and income brackets.

In other words, we believe that in a period of rising expenditures the static analysis of the type presented in the TNEC study and the Musgrave study must be supplemented by a dynamic analysis which takes into consideration both the rise in incomes resulting from the defense program and the rise in taxes.

By suggesting that the additional tax burden should be appraised in the light of what happens to incomes, we do not want to suggest that the equity of the tax burden should be measured not by the size but by the increase in incomes. Much of the increases in family incomes, at least in real terms, are due to

[10] The Economic Situation at Midyear 1951, by the Council of Economic Advisers, p. 133 ff., Washington, D. C., July, 1951.

[11] The text also calls attention to the increase in the cost of living which has taken place since Korea.

additional members of the family finding jobs, to the breadwinner working longer hours, to his upgrading, etc. Such increases in family income lead to higher tax rates under a progressive income tax system, but it would be wholly unjustified, on equity or incentive grounds, to impose directly a tax on doing more or higher caliber work. Nevertheless, in appraising the psychological impact of additional taxes, it does make a great deal of difference if they are imposed on people whose standard of living is curtailed through taxes, or whose buying power is rising in spite of additional taxes.

A Statistical Illustration. An attempt has been made recently to illustrate the relationship between various assumed increases in incomes and actual and proposed increases in federal taxes.[12]

Tables 1 and 2 show estimated increases and decreases in income of a

[12] By Albert C. Neisser of the Tax Advisory Staff of the Secretary of the Treasury. The underlying assumptions and estimates are Mr. Neisser's own and do not necessarily reflect opinions or estimates of the Treasury Department. The computations were made before adoption of the Revenue Act of 1951.

TABLE 1

CHANGES IN INCOME AFTER FEDERAL TAXES FOR VARIOUS HYPOTHETICAL INCREASES IN INCOME BEFORE TAX SINCE KOREA*

FOUR-PERSON FAMILY LIVING IN DETROIT, MICHIGAN

Income Change Since Korea	Selective Levels of Adjusted Gross Income Before Korea							
	$1,000	$2,000	$3,000	$4,000	$5,000	$6,000	$8,000	$10,000
Amounts of increase or decrease (–) in income after taxes since Korea †								
No change	$ –52	$ –101	$ –146	$ –248	$ –354	$ –493	$ –808	$ –1,151
5% increase	– 9	31	– 44	–108	–182	–254	–498	– 762
10% increase	34	117	80	34	17	– 26	–187	– 350
15% increase	76	205	183	160	189	204	39	61
20% increase	119	293	286	305	372	386	347	431
25% increase	162	378	390	456	555	631	654	772
Per cent of increase or decrease (–) in income after taxes since Korea †								
No change	–5.8%	–5.6%	–5.4%	–7.1%	–8.2%	–9.5%	–11.5%	–13.1%
5% increase	–1.0	1.7	–1.6	–3.1	–4.2	–4.9	– 7.1	– 8.7
10% increase	3.8	6.5	3.0	1.0	0.4	–0.5	– 2.7	– 4.0
15% increase	8.4	11.4	6.8	4.6	4.4	3.9	0.6	0.7
20% increase	13.2	16.3	10.6	8.7	8.6	7.5	5.0	4.9
25% increase	17.9	21.0	14.5	13.0	12.9	12.2	9.3	8.8

* Taking into account the increased rates under the Revenue Act of 1950, the Social Security Act Amendments of 1950, the Excess Profits Tax Act of 1950, and the further increases in rates proposed by the Secretary of the Treasury in his statement before the Committee on Ways and Means, February 5, 1951.

† Adjusted gross income plus imputed undistributed profits of corporations plus corporation taxes to the extent that they are assumed to be borne by dividend recipients minus all federal taxes except estate and gift taxes.

NOTE: This illustrative table is derived from two sets of estimated effective rates of federal taxes at selected levels of adjusted gross income. These are of the conventional static type: the first set represents federal tax rates in force before the outbreak of hostilities in Korea; the second set, the federal tax rates which would have applied during the fiscal year 1952 had the tax increases been adopted which the Secretary of the Treasury proposed in his statement before the Committee on Ways and Means, February 5, 1951. The two sets of estimated rates are shown in Table 2.

four-person urban family after payment of all direct and indirect federal taxes at pre-Korean and projected levels of incomes and tax rates. The projected taxes and income after taxes are estimated on the basis of the rate increases proposed by the Secretary of the Treasury in February, 1951, and not on the basis of the lower rate increases adopted in the Revenue Act of 1951. The burden of taxes assumed shifted to consumers (excises and portions of corporate income and excess profits taxes) was estimated on the basis of the 1948 Survey of Consumer Spending in Detroit, Michigan, conducted by the Bureau of Labor Statistics.[13] In view of the limitations of the sample, the estimates derived from it are to be considered tentative and particularly not of nation-wide validity.

Personal incomes actually have increased from the pre-Korean level to the level of the end of calendar year 1951 by 19 per cent; after allowance for price increases, by about 10 per cent. It cannot be assumed that the average

[13] "Consumer Spending: Denver, Detroit, and Houston, 1948," *Monthly Labor Review*, December, 1949.

TABLE 2

ESTIMATED EFFECTIVE RATES OF FEDERAL TAXES BEFORE KOREA AND FOR THE FISCAL YEAR 1952 * †

FOUR-PERSON FAMILY LIVING IN DETROIT, MICHIGAN

Selective Levels of Adjusted Gross Income	All Federal Taxes ‡		Individual Income Tax		Social Security Taxes		Excise Taxes and Customs		Corporation Income and Excess Profits Taxes	
	Pre-Korean rates	Proposed fiscal 1952 rates*	Pre-Korean rates	Proposed fiscal 1952 rates*	Pre-Korean rates	Proposed fiscal 1952 rates*	Pre-Korean rates	Proposed fiscal 1952 rates*	Pre-Korean rates	Proposed fiscal 1952 rates*
$ 1,000	11.7%	17.1%	...	...	2.5%	3.1%	4.2%	5.4%	5.0%	8.6%
2,000	11.6	16.8	...	...	2.5	3.1	4.3	5.4	4.9	8.3
3,000	11.6	16.6	1.8%	2.5%	2.1	2.6	4.0	5.3	3.7	6.1
4,000	14.0	20.3	5.0	7.2	1.8	2.4	3.7	4.7	3.5	6.0
5,000	16.0	23.2	6.8	9.8	1.6	2.1	3.8	4.8	3.7	6.4
6,000	16.9	25.2	8.0	11.5	1.4	1.9	3.3	4.5	4.2	7.3
8,000	19.4	29.5	9.4	13.3	1.2	1.6	3.4	4.5	5.4	10.1
10.000	21.4	32.6	10.4	14.4	1.1	1.4	3.7	5.1	6.2	11.7

* Taking into account the increased rates under the Revenue Act of 1950, the Social Security Act Amendments of 1950, the Excess Profits Tax Act of 1950, and the further increases in rates proposed by the Secretary of the Treasury in his statement before the Committee on Ways and Means, February 5, 1951.

† Effective rates of tax are computed on the basis of adjusted gross income plus imputed undistributed corporate profits and corporation taxes to the extent that they are assumed to be borne by dividend recipients.

‡ Exclusive of estate and gift taxes.

NOTE: The effective rates of tax are shown at selective levels of income and not for average incomes in various income brackets. The usual income bracket approach does not lend itself to the type of dynamic analysis envisaged here. The relative tax burdens on average incomes within each bracket may not change at all except, of course, for changes in rates, while the income units which make up one bracket at time one may have all shifted upward into the next following bracket at time two.

increase in incomes was the same for families in all income brackets. In a period of rising incomes, the lowest brackets are likely to include a higher proportion of relatively fixed income families than the higher brackets. Thus it may happen that in the lower brackets the disposable income of a relatively larger number of people was actually curtailed, while in the higher brackets the average income of a family would show increases, even after allowing for the higher taxes.

It would be very desirable if this dynamic approach could be presented in terms of the actual changes in income over a period of years. This would require the possibility of measuring in each bracket the average percentage rise in income per family or spending unit. Also, it would be desirable to have for each income bracket the percentage of units whose income has increased, remained stable, or decreased. As long as the available information does not provide sufficient data for such a comprehensive analysis, the illustrative method used in this paper may have some value at least for demonstrating the effect of the expenditure and tax side of the government program on individual incomes in various brackets.

Difficulties Arising Out of the Use of Averages [14]

The method of expressing the tax burden as a percentage of aggregate income in each income class may be open to criticism on the ground that averages of this sort will sometimes give misleading results when the frequency distribution to which they refer is not reasonably symmetrical. For reasons discussed below, the taxpaying public is far from homogeneous with respect to important characteristics which determine the amount of taxes people pay.

This possible shortcoming in the estimates has particular relevance for Musgrave's conclusion as to the width of the income range within which the tax distribution is believed to be essentially proportional. To illustrate the problem in the simplest possible manner, let us assume that the taxpaying public can be divided into two equal groups, each of which is relatively homogeneous in so far as the characteristics which determine tax payments are concerned. Let us assume, further, that the first group shows a rising ratio of tax payments to income as we move up the income scale, and the second group a falling ratio, and that the amount of increase from one income class to the next in the first ratio equals the amount of decrease in the second. If the two groups are combined, the over-all ratio of tax payments to income will be proportional for all income classes. This is illustrated below:

Income Class	*Ratio of Tax Payments to Income*		
	Group I	*Group II*	*All Groups*
A	16%	24%	20%
B	18	22	20
C	20	20	20
D	22	18	20
E	24	16	20
F	26	14	20

Under the assumed conditions, the averages for all taxpayers cover up the progressivity for one group and regressivity for the other. The result is a seriously misleading picture regarding

[14] In formulating this section, the authors benefited considerably from discussions with Joseph A. Pechman.

the equitableness of the hypothetical tax system and the impact of taxes on different sectors of the economy.

This illustration is, of course, a gross oversimplification of the actual situtation, yet the principle involved is directly relevant to the problem at hand. We know, for example, that the amount of taxes paid by the agricultural population varies considerably from the amount paid by city dwellers. Farmers typically have large amounts of nonmoney income, and they have their own consumption and savings patterns. If separate estimates were made for each group, we would expect to find significant contrasts between the ratios of tax payments to income by income level.[15] Musgrave calls attention to this situation when he observes that the effective rate schedule for urban families is probably similar to the results obtained with the money income series, and that the schedule for farm families is much closer to the results obtained with the broader income series.[16] The desirability of supplementing the over-all burden study with separate farm and nonfarm series is plain, since the distributional pattern for each sector tends to become blurred when composite averages are used.

Another important characteristic of the population which affects the amounts of taxes paid is the variation in family size. This variation influences the consumption pattern at different income levels and, consequently, the amount of taxes assumed to be distributed according to consumers' expenditures.[17] More important, it has a large bearing upon federal individual income tax liabilities because of the income-splitting provisions and the exemptions for dependents. For example, at the $5,000 level of statutory net income before exemptions, the effective rate of the federal individual income tax in 1948 varied as follows:

Single person, no dependents	16.2%
Married couple, no dependents	12.6%
Married couple, two dependents	8.6%

In each income class, we would expect to find that a frequency distribution of taxpayers by effective income tax rates would show a tendency for those with no dependents to cluster around one rate, for those with one dependent to cluster around a lower tax rate, for those with two dependents around a still lower rate, and so on. The relative position of the clusters will, of course, be similar from one income level to the next, but the relative proportions of single persons, married couples, and large families in each income class will vary considerably. In view of the fact that individual income taxes accounted for almost one-third of all tax payments in 1948, the effect of variation in family size upon the tax distribution estimates is of considerable importance.

Chart I presents a "family" of effective rate curves, each curve expressing the ratio of income tax payments to income for taxpayers with the indicated number of dependents. The curves have the same general shape, and the progressivity of the income tax is

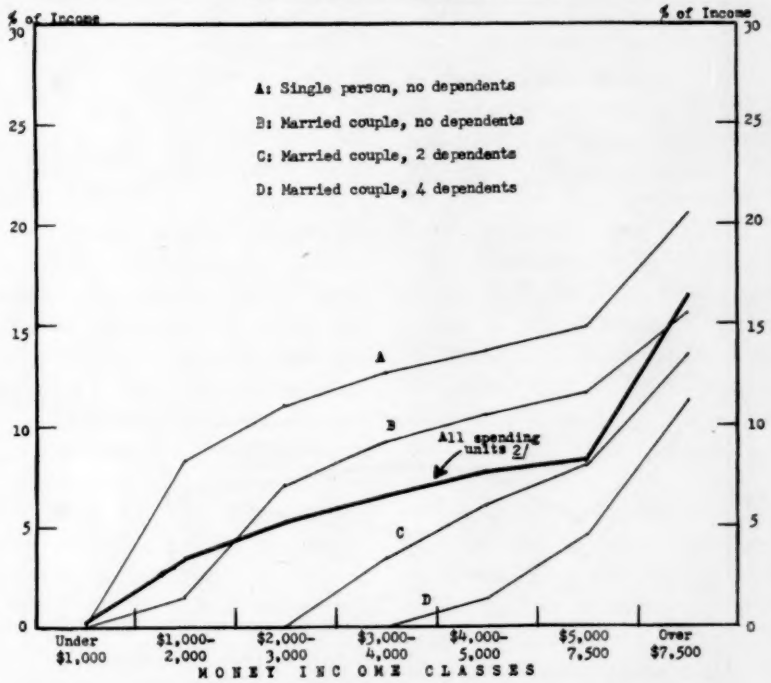
[15] For estimates of how farm and nonfarm consumers would fare under a federal retail sales tax, see H. P. Wald, "Variations of Retail Sales Taxes," *American Economic Review*, XXXIV (June, 1944), pp. 291-3, especially Table VI.

[16] See page 22 in this issue.

[17] Estimates of the sales tax burden by size of family and income level are given in Wald, *op. cit.*, pp. 288-91.

CHART I

EFFECTIVE RATES OF FEDERAL INDIVIDUAL INCOME TAX BY INCOME CLASSES, 1948 [1]



1/ Based upon income concept in Musgrave's initial study. Effective income tax rates are computed on the basis of average income in each class.
2/ Computed from Musgrave's revised distribution of tax payments.

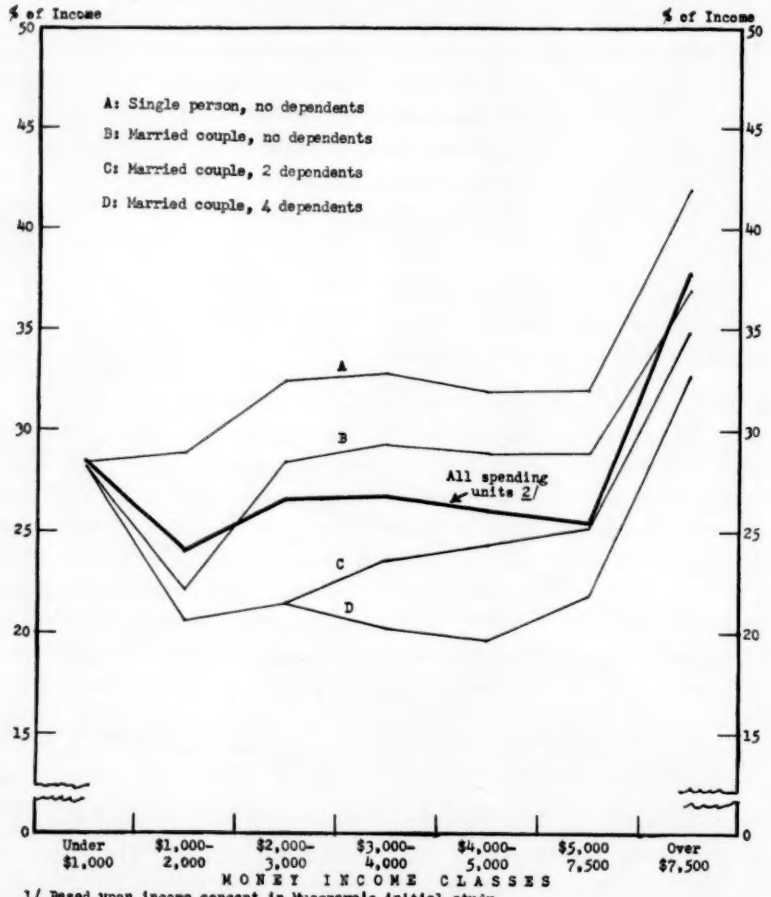
readily seen. Superimposed on this pattern is a composite curve which expresses the average ratio of income tax payments to income in 1948 for all taxpayers at each income level. The latter curve has a somewhat different shape than the curves for each of the more homogeneous size groups. Over a significant income range, the composite curve rises more gradually than any of the others. It pictures the income tax as being less progressive in this range than is actually the case.

As an experiment, some crude adjustments have been made in Musgrave's results in order to derive approximate effective rate curves for taxpayers of different family and dependency status. The effect of the adjustments is shown in Chart II. The adjustments have been limited to the federal individual income tax, for which the tax liability can be readily computed. Thus, the chart does not allow for the variation in payments under other taxes due to family and dependency status. The money income concept is used, since noncash and imputed income are not ordinarily taxed under the income tax.

The procedure followed was, first, to deduct from Musgrave's estimates of the effective rates of tax (line 1, Table 2, in his Rejoinder in this issue) the

CHART II

EFFECTIVE RATES OF TOTAL TAXES BY INCOME CLASSES, 1948 [1]



1/ Based upon income concept in Musgrave's initial study.
2/ As estimated by Musgrave (see Table 2 in his "Rejoinder" in this issue).

effective rates of the federal income tax (as derived from line 1, Table 5). To this adjusted series of rates were added the computed effective income tax rates in 1948 for each size group. The chart also shows Musgrave's effective rate curve for all taxpayers.

The individual income tax provides the main element of progression in the tax structure. To the extent that the corporation income tax falls upon stockholders, it also is progressive, but this progression is not important until the $7,500 income level. It is estimated that more than 70 per cent of total dividend payments to individuals are received by taxpayers with incomes above this level (see line 12 in Musgrave's Appendix Table I). The federal individual income tax provides a $600 exemption for single persons, $1,200 for married couples with no dependents, and $600 for each additional dependent. For the first one or two tax

brackets above these exemption levels, the step-up in effective income tax rates is relatively rapid. The chart shows that, below the income tax exemption levels, the estimated effective rates of total tax payments decline as income rises. This decline is due to the weight of the property tax and the various taxes which are assumed to be distributed according to consumers' spending. The curves are U-shaped for all size groups except single persons. This pattern would probably be accentuated if the estimates for tax payments other than the income tax were also adjusted for the variation in consumption standards due to family size. The U-shaped feature is less pronounced in the composite curve for all taxpayers, since the curves for the different size groups vary in shape and do not always move in the same direction.

Difficulties Arising out of the Treatment of Nonmoney and Imputed Income.

When nonmoney income (e.g., home-grown food and rental value of owner-occupied homes) and imputed income (e.g., corporate taxes and undistributed profits) are added to the money income in each class, correct statistical procedure requires that the taxpayers to whom this additional income is assigned be shifted upward in the income scale. In many cases, this shift will be large enough to push these taxpayers above the class limits and into a higher income group. Musgrave did not allow for such shifting, nor did Tucker. Instead, nonmoney and imputed income were lumped together with money income in each class, and effective tax rates were recomputed.

The addition of nonmoney income is particularly important in the first two income classes. In the lowest income class, its effect is to reduce Musgrave's estimate of the effective tax rate from 28.4 per cent, on the basis of a money income concept, to 17.9 per cent, on the basis of the broader income series; in the $1,000-$2,000 class, the reduction is from 24.0 per cent to 20.5 per cent (see lines 1 and 2 in his Table 2). This eliminates the U-shaped feature of Musgrave's tax distribution curve. Because of this substantial change, it is important to determine the nature of the error that is introduced when no allowance is made for the upward shift of taxpayers with nonmoney and imputed income.

Let us first consider the probable effect of adding nonmoney income. In order to illustrate the nature of the problem, let us make the simplifying assumption that, for the bulk of the taxpayers receiving nonmoney income in the lower income classes, the amount received is sufficiently large to shift them into the next higher income class. In this event, the effective tax rate in the lowest class would be changed only slightly when nonmoney income is added. Because of the heavy concentration of nonmoney income at the bottom of the income scale, the number of taxpayers and the amount of income shifted from the first to the second class will be considerably more than the amounts shifted upward from the second to third class. This will result in a substantial reduction in the effective tax rate in the second class, and progressively smaller reductions in higher income classes. The U-shaped feature of the tax distribution curve would thus be accentuated.

The simplifying assumption made above as to the effect of adding nonmoney income in the lower class intervals may not be very far from the actual situation. Nonmoney income is concentrated among the rural population, which accounts for half the number of persons with incomes below $1,000. Rural families typically are large families, and they are likely to have sizable amounts of home-grown food and other forms of noncash income. With the introduction of the broader income concept, therefore, most of these families will probably fall in the next higher class. The problem of estimating the net effect of shifts of this sort is extremely complex. It is doubtful whether any short-cut methods of adjustment would be satisfactory.

Failure to allow for the upward shifting of taxpayers who are credited with imputed income in the form of undistributed profits and corporate tax payments poses a somewhat different problem. These types of income are subject to a relatively high effective tax rate. Allowing for shifting, therefore, would increase the effective tax rates in the income classes which, on balance, would gain additional taxpayers as a result of the shifting process.

* * * * * * *

In drawing attention to these technical difficulties, the authors are not questioning the general usefulness of the results presented by Musgrave and others who follow essentially the same methods. We believe, however, that efforts to refine the burden analysis studies by adding estimates for significant subgroups, and by improved methods of allowing for nonmoney and imputed income, should be encouraged. To a large extent, progress in tax burden analysis is dependent upon progress in obtaining more adequate estimates of the distribution of consumers' income and spending and of year-to-year changes in this distribution.

REJOINDER TO DR. TUCKER

R. A. MUSGRAVE AND L. FRANE *

I. GENERAL RESULTS

DR. TUCKER'S and our end result is expressed in terms of effective rates of tax, that is, tax payments as per cent of income by income brackets.[1] This end result depends on two clearly distinguishable parts—(1) the distribution of income and (2) the distribution of tax payments.

With regard to the distribution of income, Dr. Tucker makes an interesting addition to our discussion. He proposes that effective rates of tax be computed with reference to a broader concept of income than money income only. He shows that if this is done, regression at the lower end of the scale disappears. While Dr. Tucker's method of deriving his nonmoney income series is unsatisfactory, an alternate distribution developed by us shows rather similar results. The use of broader income concepts opens new difficulties, but it is interesting additional information. At the same time we reject Dr. Tucker's charge that our income concept is a "statistical error" and that his concept is correct. There are good reasons why the broader concept should be considered supplementary to, not in lieu of, the results based on money income.

With regard to the distribution of tax payments, Dr. Tucker's comments add little, and they are rather misleading. He proposes many detailed changes which leave the general reader with the impression that there exist a large number of weighty errors, all designed to overallocate taxes to the lower brackets. This impression does not stand up under careful analysis of Dr. Tucker's evidence. Some of his criticisms are valid, and it would be surprising indeed if he should not be able to suggest some improvements in so detailed a study. These points are taken care of in our revision, but they do not alter the picture much. Many other points of contention are debatable, and there are some which we believe are mistaken and major sources of error in Dr. Tucker's own conclusions.

* We gratefully acknowledge the assistance of the Research Seminar in Quantitative Economics of the University of Michigan which contributed the services of Miss Frane for the statistical analysis underlying the results of this paper. Also, we are indebted to the Survey Research Center of the University of Michigan for further assistance.

[1] See R. S. Tucker, "Distribution of Tax Burdens in 1948," *National Tax Journal*, IV (September, 1951), p. 269, and R. D. Musgrave, J. J. Carroll, L. D. Cook and L. Frane, "Distribution of Tax Payments by Income Groups: A Case Study for 1948," same *Journal*, IV (March, 1951), p. 1.

Unfortunately Dr. Tucker did not assemble his distribution of *total* tax payments by income brackets. Had he done so, he would have found his distribution to be almost the same as ours. Surely, this would have been pertinent information for the reader. It would have shown that the differences between Dr. Tucker's and our effective rate patterns are due almost entirely to the use of different income concepts. Also, it would have destroyed the impression, gained by the general reader of Dr. Tucker's review, that the bulk of our analysis (ninety per cent of which dealt with the distribution of tax payments) contained a long succession of errors all tending toward an overstatement of the tax burden on the lower brackets.

At the same time this striking, and indeed unexpected, similarity of our over-all results does not prove them correct since it covers up a number of offsetting differences. Our four "most serious errors," according to Dr. Tucker, are: (1) failure to include income in kind; (2) inclusion of retained corporation earnings in income; (3) exaggeration of wage income in lower brackets; and (4) allocation of tax on farm land according to rental income.

Point (1) was covered already. With regard to (2) we find our procedure to be one of various permissible methods, whereas Dr. Tucker's procedure (of excluding retained earnings on the income side but imputing the entire part of the corporation tax falling on dividends and retained earnings on the tax side) seems untenable to us. With regard to (3), we show that the use of our wage series (which Dr. Tucker was justified in criticizing and which is now replaced) was more limited than unclear exposition on our part led Dr. Tucker to believe. With regard to (4), we find that the mixture of series used by Dr. Tucker may or may not be superior. But, however this may be, the resulting difference is of negligible quantitative importance.

The major points in which we believe Dr. Tucker's changes to be incorrect are his treatment of retained earnings and corporation taxes falling thereon (which renders his results more progressive) and his distribution of dividend income (which renders his results less progressive). Numerous other points at which we disagree concerning the appropriate series to be used or the assumption to be made in regard to shifting are more largely a matter of judgment.

II. INCLUSION OF NONMONEY INCOME

We begin with the income distribution aspect of the problem, and for this part of our discussion hold the distribution of tax payments constant. We will comment in turn on the derivation of the nonmoney income series, the difference in incidence patterns resulting from the use of different income concepts, and the merits of various concepts.

Distribution of Nonmoney Income

Our earlier income series (with minor adjustments) is shown in line 6 of Table 1, and the components in lines 1-3. Lines 4 and 5 are the additional items included in our broader series shown in line 7.[2] This series is more or less comparable to that of Dr. Tucker as shown in line 11.

[2] For explanation of lines 4 and 5 see Appendix A.

Dr. Tucker and we start out with the same S.R.C. series on money income, as shown in lines 1 and 8. We both add corporation tax payments imputed to the shareholder (lines 2 and 9), the distribution being according to the distribution of dividends.[3] Lacking better evidence, we based our dividend series on an estimated bridge between dividend receipts by taxpaying units (derived from *Statistics of Income* data) and the S.R.C. distribution of spending units. Although the data were inadequate, we found the results to be reasonable. Dr. Tucker dislikes our series and constructs one of his own, according to which dividends are distributed more equally. Dr. Tucker derives his series entirely from S.R.C. data. He states that he "multiplied the proportion of units owning stocks in each income bracket at the beginning of 1949, as reported by the S.R.C.—by the money income of that bracket, added the results and prorated them among the brackets."[4] This method seems unacceptable to us, as we can find it meaningful only on the implicit assumption that for shareholders the ratio of dividend to other income is the same in all brackets. This assumption is mistaken, as dividend income will increase when moving up the scale.[5] The resulting underallocation of dividends to the top bracket leads to an understatement of upper bracket income. As shown later, it also

TABLE 1

PERCENTAGE DISTRIBUTIONS OF INCOME *

Item	Spending Unit Income Brackets (Thousands of dollars)								All Brackets (Millions of dollars)
	Under 1	1–2	2–3	3–4	4–5	5–7.5	7.5+	Total †	
Our Distributions									
1. S.R.C. money income	2.0	7.6	16.1	19.5	14.5	17.3	23.0	100.0	176,000
2. Unshifted corporation tax	1.4	2.8	4.4	5.7	4.8	9.5	71.4	100.0	7,057
3. Retained corporation earnings	1.4	2.8	4.4	5.7	4.8	9.5	71.4	100.0	13,484
4. Other money income	19.5	22.8	18.2	8.0	6.1	13.0	12.4	100.0	2,600
5. Other imputed income	13.6	14.8	17.2	14.8	10.9	14.8	13.9	100.0	12,500
6. Total series, Initial Study (1+2+3)	1.9	7.1	14.9	18.1	13.5	16.5	28.1	100.0	196,541
7. Total series, broader concept (6+4+5)	2.8	7.7	15.1	17.7	13.2	16.3	27.0	100.0	211,641
Dr. Tucker's Distributions									
8. S.R.C. money income	2.0	7.6	16.1	19.5	14.5	17.3	23.0	100.0	176,000
9. Unshifted corporation tax	.4	1.6	5.6	8.1	9.0	18.0	57.3	100.0	6,485
10. "Other" income	13.8	14.7	19.3	18.2	13.2	9.6	11.2	100.0	13,000
11. Total series (8+9+10)	2.7	7.9	16.0	19.0	14.2	16.8	23.4	100.0	195,485

* For explanation of lines 4 and 5 see Appendix A.

† Components do not necessarily add to 100 per cent due to rounding errors.

[3] The amount of tax imputed in Dr. Tucker's case falls short of ours by $572 million. This includes some difference in total, but is largely due to the use of a slightly different shifting assumption.

[4] See Dr. Tucker, *op. cit.*, p. 284. Reference is to *Federal Reserve Bulletin*, Dec., 1950, p. 1590, Table 5.

[5] This is shown clearly by *Statistics of Income*, Part I, Preliminary Report for 1948.

leads to an underallocation of upper bracket taxes. The net effect is to reduce progression.[6] It goes far to offset Dr. Tucker's many other corrections, most of which tend in the opposite direction.

As shown in line 3 of the table, our series includes retained earnings which are imputed to shareholders. Dr. Tucker omits this item and considers our procedure to be one of our four major errors. As discussed at great length in our Initial Study, the problem may be handled in two ways: one may impute retained earnings on the income side, and the tax on retained earnings on the tax side; or one may omit *both* items.[7] As shown in our Initial Study, the net results under the two procedures are rather similar.[8] We chose the first approach partly because we wanted to allocate the entire tax bill (and to avoid the awkward conclusion that part of the corporation tax is paid by "nobody"), and partly because we considered it to be the more significant case. Yet, we would not debate Dr. Tucker's judgment if he preferred the second approach and excluded both retained earnings and the tax thereon. But this is not what Dr. Tucker does. He chooses to impute the entire part of the corporation tax falling on dividends and retained earnings without imputing retained earnings. Unless it is assumed that the entire unshifted part of the corporation tax goes to reduce dividends (which is surely not the case), this implies that a tax on retained earnings is a burden to the shareholder, while an addition to retained earnings does not add to his income. This, we submit, is untenable. The result is an overstatement of progression by way of understating high bracket income.

The derivation of our broader income concept involves the further addition of certain items of money income (line 4, Table 1) and of nonmoney income not contained in the S.R.C. series but contained in the Department of Commerce concept of personal income. The derivation of both series is described in detail in Appendix A. Dr. Tucker, who is not too clear on the point, apparently also tries to distribute the Department of Commerce total of nonmoney income. Comparison of our nonmoney income distribution (line 5) with that of Dr. Tucker (line 10) shows the two to be quite similar in the first two brackets. Beyond this, our distribution allocates more to the upper brackets than does his. This is to be expected as Dr. Tucker allocates the total amount according to 1941 ratios of money to nonmoney income, as shown in the 1941 B.L.S. study. This is not a valid assumption. The components contained in the B.L.S. study on *Spending and Saving in Wartime* include the

[6] The resulting error on the income side leads to an overstatement, but the resulting errors on the tax side lead to an understatement of progression. The latter much offsets the former, especially since retained earnings are excluded on the income side.

[7] The argument that total retained earnings must be imputed to the shareholder does not imply that the entire corporation tax must be thus imputed, but only the entire part of the tax which falls on retained earnings. If we assume no part of the tax to fall on retained earnings, then whether retained earnings should be imputed on the income side or not is a matter of income definition only. If we assume that part of the tax falls on retained earnings we can either (1) impute the entire retained earnings and the entire part of the tax falling on retained earnings, or (2) disregard retained earnings on the income side and assume that the tax falling on retained earnings does, in fact, fall on "nobody," i.e., fail to allocate the total tax bill.

[8] See Initial Study, p. 42.

value of food, housing, fuel, ice, clothing, and household furnishings received without direct money outlay. The Department of Commerce concept, in addition, includes items such as imputed interest on government bonds and the value of services furnished individuals without payment by financial intermediaries. The distributive pattern of and 10 are important only in the upper part of the scale.

Effective Rates with Different Income Concepts

As Dr. Tucker points out, the pattern of effective rates differs substantially, depending on whether the narrower or the broader concept of income

TABLE 2

EFFECTIVE RATES OF TAX FOR DIFFERENT INCOME AND TAX DISTRIBUTIONS *

	Spending Unit Income Brackets (Thousands of dollars)							
	Under 1	1–2	2–3	3–4	4–5	5–7.5	7.5+	Total
Our Revised Tax Distribution, including payroll taxes								
1. Income series, Initial Study	28.4	24.0	26.6	26.7	26.0	25.4	37.7	29.3
2. Broader income series	17.9	20.5	24.4	25.3	24.6	23.8	36.4	27.2
3. Dr. Tucker's income series ..	20.1	21.7	25.9	25.6	25.1	25.5	44.6	29.5
Our Revised Tax Distribution, excluding payroll taxes								
4. Income series, Initial Study	25.3	21.1	21.7	23.2	23.6	23.8	37.1	26.9
5. Broader income series	16.0	18.0	19.9	21.9	22.3	22.3	35.8	25.0
6. Dr. Tucker's income series ..	17.9	19.0	21.1	22.2	22.8	23.9	43.9	27.1
Dr. Tucker's Tax Distribution, including payroll taxes								
7. Income series, Initial Study	27.8	22.7	25.3	25.8	26.8	27.3	39.7	29.7
8. Broader income series	17.2	19.2	23.1	24.4	25.3	25.5	37.8	27.4
9. Dr. Tucker's income series ..	18.7	20.8	23.9	25.0	26.3	28.3	44.8	29.7
Dr. Tucker's Tax Distribution, excluding payroll taxes								
10. Income series, Initial Study	23.5	19.4	21.3	22.4	23.9	25.0	38.4	27.0
11. Broader income series	14.6	16.4	19.6	21.1	22.6	23.4	36.6	25.0
12. Dr. Tucker's income series ..	15.8	17.8	20.2	21.7	23.4	25.9	43.2	27.0

* For lines 1 to 6, the tax distribution is as shown in our Table 5. For lines 7 to 12, the distribution is based on dollar totals underlying Table 5 of Dr. Tucker's study, and kindly supplied by him. Income distributions are as shown in lines 6, 7, and 11 of Table 1.

the latter type of items obviously differs from that of the former.[9] Nevertheless, the resulting differences in lines 5 is used. This is shown in lines 1 to 3 of Table 2, where our revised tax dis-

[9] Dr. Tucker's total of $13 billion presumably is the amount quoted in note 1, p. 11 of our Initial Study. He apparently assumes that the components of this total—which was an estimate given in reconciliation of S.R.C. and Department of Commerce income—are those of nonmoney income as defined in the B.L.S. study for *Spending and Saving in Wartime*. The $13 billion referred to in our footnote were items included in the personal income concept of the Department of Commerce. Only $8 billion of this total are of a type similar to the items included and described in the B.L.S. 1941 survey; moreover, even these items are not quite the same, and methods of measuring similar items as well as weights differ in the two cases. The other $5 billion are items not considered by the B.L.S. study, such as accrued interest or services of financial intermediaries. Some detailed information on the differences between the B.L.S. and Department of Commerce concepts was furnished us by Miss Margaret Reid but cannot be included here.

tribution is applied to the various income series.[10] Comparison of lines 1 and 2 shows that if the broader income concept is used, regression disappears from the first to the second lowest bracket and is replaced by distinct progression. Also, the degree of progression from the second to the third bracket is steepened. As between the $2,000-3,000 and the $5,000-7,500 brackets, the rate schedule is slightly regressive (or, allowing for defects of the data, substantially proportional) under both income concepts.[11] While the results differ depending on whether we use our narrow income concept (line 1) or our broad income concept (line 2), they are much the same for our broad income concept (line 2) and Dr. Tucker's income concept (line 3). The remaining differences are (a) that Dr. Tucker shows somewhat less progression from the first to the second bracket, and (b) that the degree of progression from the second highest to the highest bracket is exaggerated in Dr. Tucker's case. Difference (a) reflects the fact that when moving from the S.R.C. to the "broader" income concept, we put a somewhat larger amount in the bottom bracket. Difference (b) reflects the fact that Dr. Tucker, due to his exclusion of retained earnings (combined with imputation of the entire part of corporation taxes which is taken to rest on dividends and retained earnings) understates high bracket income.

[10] A comparison between the cases using Dr. Tucker's and our tax distributions is considered later.

[11] In the earlier study (*op. cit.*, p. 26, Table 6, line 9) distinct progression began between the $4,000-5,000 and $5,000-7,500 brackets. This now disappears as the result of our change in personal income tax treatment.

Significance of Different Income Concepts

Dr. Tucker classifies our income concept as a statistical error, and—it may be presumed—considers his concept to be statistically correct. We regret that we did not include a discussion of the conceptual problem in our earlier study. What constitutes the proper income concept for a study of this sort (i.e., the concept most expressive of "ability to pay") is a matter of judgment. Certainly, it cannot be argued that one concept is correct to the exclusion of all others.

The items of nonmoney income (line 5 of Table 1) which are added to obtain our broader series may be divided into two groups, including first, income which is not realized (such as undistributed earnings of fiduciaries and accrued interest on savings bonds); and second, nonmoney income which is realized (such as nonmoney income of farm operators, nonmoney wages, services of financial intermediaries, imputed net rental income from owner-occupied houses and so forth). Regarding the first group, as for retained corporate earnings, the issue is whether unrealized income should be included. Our reasons for including retained earnings of corporations have been mentioned previously, and since they are included, the other items are added for consistency. As long as the corresponding adjustment is made on the tax side, there is room for debate whether these items should be included. Yet Dr. Tucker's sweeping contention that "even tax authorities do not regard unrealized capital gains as income" is quite incorrect.[12] Apparently such well

[12] Tucker, *op. cit.*, p. 277.

known writers as Schanz, Haig, or Simons are not to be rated as tax authorities.[13]

The items in the second group involve no problem of realization. They are consumed, and hence realized, income. Here the question is only how far one should go in including such items. If wages in kind and food grown on farms are included, one may also wish to include the work of housewives. Or, if rental income from owner-occupied residences is included, one may also wish to include imputed income from other nonincome earning assets held by the taxpayer.[14] If all such adjustments are included, it may well be that the effective rate pattern based on the "broader" income concept would be less, not more, progressive than that based on the narrower concept of money income. And this is not the end. There is the basic question whether income as such is an adequate measure of ability to pay—this view is implied in the kind of analysis here under discussion—or whether other features should be considered as well. Thus, it might be argued that an income should be imputed to leisure (i.e., voluntary unemployment), or that wealth (in addition to the income derived therefrom) adds to taxable capacity because it constitutes a contingency reserve.

To be sure, it would be impossible to construct such an over-all index of tax-paying ability, and at best it would be a highly subjective concept. As an approximation, it *is* of interest to include only such items as are valued in the Department of Commerce total. However, it is important to emphasize the arbitrary nature of the income concept and the difficulties which arise once the simple concept of money income is abandoned.[15]

The results of the money income approach are of special interest because the tax law addresses itself to the money sector of the economy. While it fails to reach certain nonmoney islands, this is a defect rather than an intent of the law. For policy purposes it is of interest, therefore, to see how the law works out in terms of the money area to which it is addressed. Moreover, nonmoney income is not spread equally among all people within the

[13] See H. C. Simons, *Personal Income Taxation*, Chapter VII. The question whether unrealized gains should be included in the ideal income definition is one problem; whether it is feasible in actual tax legislation to do so (or whether attempts at inclusion would increase inequities) is another. An affirmative answer to the first question is all that is needed to justify our procedure. It may be argued that such gains, during 1948, were partly due to price level increase and hence not "real" gains. This is correct, and the "true" income concept would be in real terms. But it is obviously hopeless to adjust for this factor, e.g., to impute losses to savings bond holders.

[14] These assets need not be durable *consumer* goods, since we are not here concerned with a consumption concept of income. Using the accretion of wealth concept of income, we may impute an income to cash holdings (which could be invested) as well as to a car which could be loaned out, or the proceeds from which could be invested.

[15] Looking back at other studies of this kind we find that the choice of the income concept was based on expediency. Thus Shirras and Rostas, whose study appeared prior to distribution data becoming available, use a statutory income concept. (Shirras and Rostas, *The Burden of British Taxation*, Cambridge, 1943.) The T.N.E.C. study of Colm-Tarasov, and the later revision of Miss Tarasov ("Who Does Pay the Taxes?" *Social Research*, 1942), as well as Dr. Tucker's critical review of the earlier study (*The Tax Review*, July, 1941) are all based on the 1935-1936 N.R.B. distribution. The latter includes some imputed income but there is no discussion of the adequacy of the concept in these tax studies. The Adler study (see *Fiscal Policies and the American Economy*, Kenyon E. Poole, ed.) finally uses the S.R.C. data as we do.

same income bracket. Nonmoney income, especially in the lower brackets, appears to be concentrated largely among a well defined group, i.e., the farm population. It would be of interest, therefore, to make a separate burden study for the farm and the nonfarm population.[16] While we did not have the time to do this, it is our guess that the effective rate schedule for the urban sector (which accounts for the bulk of taxes and a relatively small part of low bracket nonmoney income) would be rather similar to the results obtained with the money income series. In short, line 2 makes an interesting supplement to line 1, but it should not be taken to replace our initial result.

III. THE DISTRIBUTION OF TAX PAYMENTS

We now proceed to the tax distribution aspect of the problem and, for this part of our discussion, hold the distribution of income constant. As noted before, the impression gained from Dr. Tucker's lengthy list of detailed criticisms is that of innumerable weighty errors, mostly exaggerating the tax burden in the lower brackets and compounding a wholly unreliable over-all picture. This is not borne out by careful analysis of Dr. Tucker's evidence, but not every reader has the necessary time for such testing.

The Over-All Results

Most striking is the fact that the composite results reached by Dr. Tucker's and our tax allocations are very nearly the same. As noted before, it is unfortunate that this was not stated in Dr. Tucker's article.

[16] As suggested by Dr. L. Klein of the Survey Research Center.

Comparison of columns 1 and 3 of Table 3 shows the distribution of total tax payments according to our study and according to Dr. Tucker's.[17] The similarity holds through the entire income range. If payroll taxes are excluded, as in columns 4 and 6 the relationship is just about as close. Comparison of columns 1 and 2, furthermore, shows that there are only minor differences between the over-all results of our initial and our revised series in which we correct for those criticisms of Dr. Tucker's which seem justified to us. The only significant difference is that there has been a moderate shift from the $5,000-$7,500 to the $7,500 and over bracket. This reflects the change in our personal income tax distribution.

The distribution of tax payments being very similar, it follows that the effective rate schedule will be much the same, whether Dr. Tucker's or our tax distribution is used, as long as the distributions are applied to the same income series. This is shown in Table 2, where we find very similar rate patterns in lines 1 and 7, 2 and 8, 3 and 9, 4 and 10, 5 and 11, and 6 and 12, respectively.

Major Sources of Difference

As noted before, the similarity in our over-all results covers up many offsetting differences in detail. In Table 4 we attempt to appraise the quantitative importance of the differences between our original tax distribution and

[17] The differences shown in the table are exaggerated because they include some differences in yield total. For our totals see text Table 5 below and Table 2 of Initial Study. Dr. Tucker's totals, reading down the last column of Table 5, part A, are (in millions of dollars): $18,039; $526; $12,886; $7,911; $6,269; $5,238; $900; $179; $6,136; and $58,084. (Figures supplied by Dr. Tucker.)

TABLE 3

DISTRIBUTION OF TOTAL TAXES

(In Per Cent) *

Spending Unit Income Brackets (Thousands of dollars)	Including Payroll Taxes			Excluding Payroll Taxes		
	(1) Initial Study	(2) Revised Results †	(3) Dr. Tucker's Results	(4) Initial Study	(5) Revised Results	(6) Dr. Tucker's Results
Under 1	1.8	1.9	1.7	1.8	1.8	1.6
1–2	5.9	5.8	5.4	5.7	5.6	5.0
2–3	13.1	13.5	12.8	12.0	12.0	11.9
3–4	16.0	16.5	16.0	15.2	15.5	15.3
4–5	11.9	12.0	12.6	11.7	11.8	12.4
5–7.5	15.4	14.3	16.0	15.7	14.5	16.1
7.5+	35.8	36.1	35.4	38.0	38.7	37.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

* These differences reflect differences in distribution and also differences in total taxes allocated. Components do not necessarily add to 100 per cent due to rounding errors.

† This distribution is the same as line 20 of Table 5.

TABLE 4

SOURCES OF DIFFERENCES IN TAX DISTRIBUTIONS *

EXCESS OF ALLOCATIONS BY DR. TUCKER OVER OUR ALLOCATIONS

(Millions of dollars)

Item	Differences: Spending Unit Income Brackets (Thousands of dollars)							Total Taxes Allocated
	Under 1	1–2	2–3	3–4	4–5	5–7.5	7.5+	
1. Personal income tax—federal	9	....	– 9	....	–144	–885	1,028	18,045
2. Corporation income tax—federal	– 2	– 1	194	214	333	769	–1,504	12,920
3. Excises	–20	– 45	– 87	–145	64	62	156	14,005
4. Social security	4	– 3	–250	–124	11	147	213	4,015
5. Property	–80	–199	–206	–145	19	155	466	6,064
6. Estate and gift and inheritance	1	6	21	31	36	72	–166	1,097
7. Personal income tax—state and local	....	2	12	10	5	4	– 33	499
8. Corporation income tax—state and local	....	– 1	10	11	19	41	– 81	699
9. Total differences	–92	–241	–315	–148	343	365	79	
10. Total amount paid according to our tax distribution	1,052	3,366	7,523	9,194	6,834	8,815	20,552	57,344

* For each tax category the total tax allocated in our Initial Study is distributed (1) by our distribution pattern and (2) by Dr. Tucker's distribution pattern. This distribution pattern was derived from a table furnished by Dr. Tucker, giving the dollar distribution of tax liabilities underlying his Table 5. The amount allocated to each income bracket by us is then deducted from the amount allocated by Dr. Tucker, to get the differences shown in Table 4.

that of Dr. Tucker. It appears that there are important differences in the federal personal income tax, the corporation tax, the payroll taxes, and the property tax. The differences, though substantial for specific taxes, are largely offsetting. The remaining net differences shown in line 9 are quite small, relative to the total dollar allocations shown in line 10.[18]

As the result of Dr. Tucker's adjustments, tax liabilities are transferred toward the lower brackets (as compared to our results) in the case of the corporation income, estate and gift, and state and local personal income taxes. Among these only the first carries much weight, the transfer being from the top bracket to the $2,000 to $7,500 range. The other adjustments, in the federal personal income tax, payroll taxes, and the property tax, are in the opposite direction. In the personal income tax adjustment, a substantial amount of liabilities is transferred from the $4,000 to $7,500 range to the top bracket, and for this range it largely offsets the reverse effect of the corporation tax adjustment. The property tax adjustment moves liabilities up throughout the income scale, and is largely responsible for the net change below $2,000. The adjustment in payroll taxes, finally, moves up liabilities from the $2,000 to $4,000 income range, but it is not significant in the bottom bracket.

Specific Differences

Space and the reader's patience do not permit us to undertake a line-by-line rejoinder of Dr. Tucker's many points. But at least the major ones need to be commented on briefly. In the process, we also indicate the more important changes made in our revised series, shown in Table 5.[19] As noted before, the revised distribution of total taxes is quite similar to our earlier result except for the two top brackets. As to specific taxes, the results are quite similar, except for the two top brackets of the personal income tax.[20]

Personal Income Tax. Dr. Tucker accepts our distribution of personal income tax payments for brackets under $4,000, but above that level he shifts the distribution upwards. This correction is based on the *Preliminary Statistics of Income for 1948* which had not appeared when our study was made. While the case is not conclusive, it appears that Dr. Tucker's adjustment of the S.R.C. data is justified since the S.R.C. data are not efficient for calculating the tax liabilities of families in the top bracket. His adjustment is accepted in our revised series. As shown in Table 4, line 1, the result is largely one of transferring taxes from the second highest to the highest bracket. This means that the "plateau" of nearly proportional taxation in the middle range is extended upward.

Corporation Income Tax. Dr. Tucker generally agrees with our shifting assumptions for the standard case. This is perhaps unfortunate. The shifting assumption with regard to the corporation tax is *the* point which, above all others, is in need of verification and debate. Since we are agreed in this respect, the differences in results are due very largely to Dr. Tucker's use of a new series for the distribution

[18] Note that in Table 4 differences due to different yield totals have been eliminated.

[19] For details see Appendix C.

[20] This will be seen from comparison of Table 5, lines 11-20 with Initial Study, Table 7, lines 7-11, and Initial Study, Table 11, lines 7-11.

of dividend income. As previously noted, this series is unacceptable as it is based on the faulty assumption that, for shareholders as a group, the ratio of dividend to other income is constant for all brackets. Since large amounts are allocated on this basis, the point is of major importance in the discussion. It is the use of this series which offsets Dr. Tucker's other adjustments and thus is largely responsible for the similarity of Dr. Tucker's over-all results and those of our original study.[21]

While this is a minor point, note that in our revised series the backward shifted part (one-eighth) is allocated on the basis of the revised wage series.

Payroll Taxes. The general problem whether such taxes should or should not be included in a study of this kind is considered later. We are now only concerned with their allocation if they are included.

TABLE 5

REVISED DISTRIBUTION OF TAX PAYMENTS *

Taxes	Spending Unit Income Brackets (Thousands of dollars)							
	Under 1	1–2	2–3	3–4	4–5	5–7.5	7.5+	Total †
	Millions of dollars							
1. Personal income tax—federal	$ 9	$ 469	$1,533	$2,327	$2,056	$2,652	$ 8,983	$18,039
2. Personal income tax—state and local	....	....	9	34	38	96	349	526
3. Corporation income tax	274	726	1,406	1,710	1,264	1,649	6,003	13,028
4. Excises—federal	226	714	1,394	1,700	1,117	1,292	1,466	7,911
5. Excises—state and local	223	559	1,084	1,299	908	1,028	1,147	6,246
6. Social security	115	410	1,435	1,260	640	524	323	4,708
7. Estate and gift	....	....	....	....	....	....	900	900
8. Inheritance	....	....	....	....	....	....	179	179
9. Property	232	477	929	1,157	880	987	1,465	6,127
10. Total	1,079	3,355	7,790	9,487	6,903	8,228	20,816	57,660
	Per Cent							
11. Personal income tax—federal	.1%	2.6%	8.5%	12.9%	11.4%	14.7%	49.8%	100.0%
12. Personal income tax—state and local	....	....	1.8	6.4	7.3	18.3	66.3	100.0
13. Corporation income tax	2.1	5.6	10.8	13.1	9.7	12.6	46.1	100.0
14. Excises—federal	2.9	9.0	17.6	21.5	14.1	16.3	18.5	100.0
15. Excises—state and local	3.6	8.9	17.3	20.8	14.5	16.5	18.4	100.0
16. Social security	2.4	8.7	30.5	26.8	13.6	11.1	6.8	100.0
17. Estate and gift	....	....	....	....	....	....	100.0	100.0
18. Inheritance	....	....	....	....	....	....	100.0	100.0
19. Property	3.8	7.8	15.2	18.9	14.4	16.1	23.8	100.0
20. Total	1.9	5.8	13.5	16.5	12.0	14.3	36.1	100.0

* See Appendix C for discussion of the methods of allocation used.

† Components do not necessarily add to totals due to rounding errors.

Differences in our payroll tax results arise from both differences in the totals used and from differences in allocation.[22] Dr. Tucker's criticism of our

[21] Tucker, *op. cit.*, p. 274.

[22] Differences in totals used are due in small part to the use of a later source by Dr. Tucker but mostly to his inclusion of certain items (state and local Civil Service Retirement, Cash Sickness Compensation Funds and Government Life Insurance premiums) not included in our earlier series. For explanation of revised series, in which all but the last item are included, see Appendix C.

payroll tax allocation is based largely on a misunderstanding (the blame for which rests with our unclear exposition on this point) of what constituted our procedure.

Dr. Tucker's main criticism, listed as one of four major errors, is directed at our use of a faulty wage income series. His criticism of this series is valid and it has now been revised. The old series, however, was not used directly in allocating payroll taxes. Rather, it was used to obtain a series on covered wages which in turn was used in the allocation of payroll taxes.[23] This covered wage series happens to be very similar to that used by Dr. Tucker, especially for the two bottom brackets at which his criticism is directed.[24] His conclusion that the use of our wage income series led to heavy overallocation in the lower brackets was, therefore, based on a misunderstanding. Rather, our heavier allocation in the lower brackets resulted from a separate treatment of railroad retirement contributions which place more weight on the lower brackets than do the covered wages series. After revising our covered wages series which was not very satisfactory, the differences between Dr. Tucker's and our results remain much the same as in the Initial Study.[25]

TABLE 6

SOURCES OF DIFFERENCE IN PROPERTY TAXES *

EXCESS OF ALLOCATION BY DR. TUCKER OVER OUR ALLOCATIONS

(Millions of dollars)

Tax	Spending Unit Income Brackets						
	Under 1	1–2	2–3	3–4	4–5	5–7.5	7.5+
1. Farm	−11	− 10	1	4	14	18	−15
2. Rental	−29	− 60	− 71	− 23	6	30	149
3. Owner-occupied residential	−16	− 85	− 84	− 86	5	59	206
4. Business	−14	− 26	− 30	− 19	7	35	42
5. Total real property	−70	−181	−184	−114	32	142	382
6. Total personal property	−10	− 17	− 26	− 22	−12	4	79
7. Total property	−80	−198	−210	−136	20	146	461

* For each tax category the total tax allocated in our Initial Study is distributed (1) by our initial distribution pattern and (2) by Dr. Tucker's distribution pattern, as we understand it to be on the basis of his text discussion. The amount allocated to each income bracket by us is then deducted from the amount allocated by Dr. Tucker.

Property Tax. In the case of the property tax it is particularly difficult to trace the differences in Dr. Tucker's and our results. An attempt to appraise these differences is made in Table 6. The major differences, it appears, arise in the treatment of rental property and owner-occupied residences.

Dr. Tucker does not criticize our breakdown of the total property tax yield between type of property, or between land and improvements. Rather, he disagrees with our shifting assumptions and the series used. Dr. Tucker

[23] See Table 1, line 17, p. 11 of our Initial Study.

[24] See our earlier Table 1, line 17 and Dr. Tucker's Table 4, line 19.

[25] For new series, see Appendix Table I, line 8.

does not distinguish specifically between land and improvements. Since our allocation of property tax yield between land and improvements is based on sketchy evidence (and was presented as a means of making our assumptions explicit) there is no objection to this. But since he does not specifically disagree with our assumptions, it is of some interest to apply them to his procedure. On this basis we find that Dr. Tucker limits shifting of the tax on improvements to one-half in the case of farm, three-eighths in the case of business, and three-quarters in the case of rental property.[26] Our assumption had been that the entire tax on improvements is shifted. It is a matter of judgment as to which assumption is more nearly correct. Since the property tax is a rather general and well established tax, and likely to be taken into account as a cost when making improvements, our assumption seems preferable to us. In the absence of empirical studies, Dr. Tucker is entitled to his assumptions, however, as are we to ours.

The other important source of difference is in the various series used. In the quantitatively most important case of owner-occupied residences, no difference in shifting assumption is involved. In our study, this tax was allocated entirely by housing expenditures of home owners. Dr. Tucker has two objections. (1) He criticizes an inconsistency in the two bottom brackets of our series. This series has now been replaced by a revised series of housing expenditures of home owners, based on data newly supplied by the S.R.C.[27] Comparison shows that the revised series is more similar to our old series than to Dr. Tucker's distribution of housing expenditures.[28] (2) Dr. Tucker feels that the housing series should not be used alone but should be combined with a series on home owners' income, and with a series for taxes on owner-occupied homes (based on 1941 data). This may or may not be an improvement.

The second most important item is rental property. Both Dr. Tucker's and our estimates assume one-half of the total tax (on land and improvement) to be shifted. The unshifted part he allocates to rental and dividend income, whereas we use rental income only. Some allowance for the dividend element may be desirable (some rental income being received by corporations) but the poor quality of Dr. Tucker's dividend series is a new source of error. Part of the tax is allocated by Dr. Tucker according to housing expenditures of renters and renters' income, while we use housing expenditures of renters only. Our housing expenditure series of renters, similar to that of home owners, was subject to Dr. Tucker's criticism and has been replaced; the new series is much more similar to our former distribution than to Dr. Tucker's series.

In the case of business property, we assumed two-thirds of the total tax to be shifted, whereas Dr. Tucker limits shifting to one-fourth of the total tax. He allocates the part falling on owners by a mixture of business, dividend, and

[26] This conclusion is based on (1) the assumption that Dr. Tucker accepts our split between land and improvements for the various categories, and (2) our interpretation of his series used.

[27] For explanation, see Appendix B.

[28] Compare Appendix Table I, line 3 with Initial Study, Table 1, line 4 and Dr. Tucker's Table 4, line 6.

rental income distributions, whereas we use dividends only. Dr. Tucker's method of averaging different series may help, but we prefer ours straight.

In the case of farm land we assumed one-third of the total tax to be shifted, as against Dr. Tucker's one-sixth. Dr. Tucker's main complaint in this case is our use of rental income in allocating the unshifted part of the tax. He notes correctly that rental income is a poor five series mix.[29] The resulting differences are such as to carry very little weight in the allocation of the total property tax, let alone the over-all tax picture.

Detailed points of contention on the taxation of personal property are passed over for lack of space, but it will be evident by now that our differences on the property tax are quite debatable. Dr. Tucker may feel sufficiently

TABLE 7

OVER-ALL PROPERTY TAX RESULTS

(Per Cent)

Property Tax Distributions *	Spending Unit Income Brackets (Thousands of dollars)							
	Under 1	1–2	2–3	3–4	4–5	5–7.5	7.5+	Total †
1. With initial property tax distribution	3.3	8.9	16.4	18.6	12.7	14.6	25.2	100.0
2. With revised property tax distribution	3.7	7.8	15.2	18.9	14.4	16.2	23.8	100.0
3. With Dr. Tucker's tax distribution	2.0	5.6	13.0	16.2	13.0	17.2	33.2	100.0
Effective Rates of Total Taxes *								
4. With initial property tax distribution	27.5	24.5	26.9	26.6	25.6	25.1	37.9	29.3
5. With revised property tax distribution	28.2	24.0	26.6	26.7	26.0	25.4	37.7	29.3
3. With Dr. Tucker's tax distribution	25.4	23.1	26.2	26.2	25.7	25.5	38.7	29.3

* All three lines assume our revised results, as shown in Table 5, for taxes other than property taxes and apply to our revised money income, shown in Table 1, line 6. All assume our old property tax total of $6,064 million.

† Components do not necessarily add to 100 per cent due to rounding errors.

fit, and perhaps his super-mix of rental income, dividends, housing expenditures of home owners, farm money income, and (1941) taxes on urban homes is better. However this may be, and since Dr. Tucker lists this as one of our four main errors, it might have been well to consider the importance of this point. The total tax allocated to farm land amounted to $651 million, and the unshifted part (according to our assumption) to $434 million. One may now compare the allocation of this total according to our rental income with that according to Dr. Tucker's certain of his results to believe that " the regressive nature of the property tax was exaggerated out of all resemblance to reality " by our estimates.[30] We are less certain that our results are *the* correct ones, but we see no reason to change our appraisal beyond certain previously mentioned corrections.

The property tax results are summarized in Table 7. As will be seen

[29] Reading from the lowest to the highest bracket, the excess of allocation by using Dr. Tucker's over that by using our rental series (in millions of dollars) equals −10, −8, +8, +12, +16, +18, −36.

[30] Tucker, *op. cit.*, p. 278.

from lines 1, 2, and 3, our revisions do not reduce, and in some respects increase, the differences between Dr. Tucker's and our results. The element of low bracket regression in effective rates for all taxes combined becomes somewhat more pronounced with our revised property tax distribution. This is shown in lines 4 and 5. Since the allocation of the property tax is generally debatable, it was of interest to see what would happen to our over-all results if they were adjusted to include Dr. Tucker's property tax distribution. The result is shown in line 6. While the element of low bracket regression is dampened, it still remains. There is little change in the rest of the picture.

III. OTHER ASPECTS

A number of more general points remain for brief consideration in this final section.

(1) Dr. Tucker refers to our "principal conclusion, regarding the U-shaped curve of tax rates in our system as a whole." [31] This is a misinterpretation. We have taken pains to emphasize the difficulties of interpreting the first bracket results, our principal conclusion being the relative flatness of the effective rate schedule over the broad range from, say, the second to the sixth bracket.[32]

(2) Dr. Tucker adds some breakdowns of effective rates for the income brackets over $7,500. Due to limitations of scope and time, we will not comment on his findings for this range.[33] But again Dr. Tucker introduces his adjustment in a way which leaves the reader with the impression of continuous understatement of progression on our part. It would have been only fair to quote our earlier statement that "it is evident that our data understate the degree of progression applicable to high incomes since there is no break of income brackets above $7,500." [34] Our reason for omitting breakdowns over $7,500 was not to understate progression but in order to stay within the framework of the S.R.C. data. We are more impressed with the difficulties of allocating taxes among higher bracket spending units than is Dr. Tucker, but would greatly welcome a careful study of tax burden distribution over this range. It will obviously show a continuous rise of effective rates to a very high level; but it is also likely to show that this rise is considerably less rapid (especially up to, say, $75,000) than the nominal schedule of surtax rates suggests.

(3) Dr. Tucker speaks of "the contributions for social insurance which [we] prejudicially call payroll taxes." [35] We hold no brief for this particular term except its briefness. Dr. Tucker surely knows that the use of the term "tax" with regard to social security payments is altogether general in economic as well as legal literature, including the Federal Insurance Contribution Act (Subchapter A, Part I of which is entitled "Tax on Employees") and innumerable other standard references. Why then suggest to the reader that our terminology is

[31] See Tucker, *op. cit.*, p. 274.

[32] See our Initial Study, pp. 28 and 49.

[33] We were surprised at first by the rapid rise of the effective rate schedule in Dr. Tucker's chart (*op. cit.*, p. 282), but after some puzzling we found it was due to the rather unusual horizontal scale used.

[34] See our Initial Study, p. 30.

[35] See Tucker, *op. cit.*, p. 276.

prejudicial, thus implying prejudice on our part?

If we had wished to be prejudiced on the treatment of payroll taxes, we should not have gone into an extensive discussion of the pros and cons of including them. As Dr. Tucker agrees, the part contributed by business is a burden and may be assumed to be shifted; and he also suggests that part of the employee contribution may be shifted.[36] It is difficult at best to decide which part of payroll taxes or social security contributions should be included; certainly omitting them entirely would be as misleading (considering the shifting) as is their complete inclusion. Moreover, large parts of the payments (which *are* compulsory) involve considerable interbeneficiary shifts. The answer, perhaps, is that the analysis of tax burden distribution should be matched by an analysis of expenditure benefit distribution, but this cannot be undertaken now.[37] In the meantime, Dr. Tucker's policy of listing two series, one with and one without payroll taxes, is a good one and is accepted here.

As shown by comparison of lines 1 and 4 in Table 2, the slope of the effective rate schedule is modified somewhat if social security taxes are omitted. There is no significant change in first to second bracket regression. Beyond this, the effective rate excluding payroll taxes rises gradually up to $7,500, whereas the effective rate including social security taxes rises more steeply from the second to the third bracket but then falls up to $7,500.

[36] See Tucker, *op. cit.*, p. 277.

[37] See the study by John Adler, "The Fiscal Systems," in *Fiscal Policies and the American Economy*, K. E. Poole (ed.), 1951.

Policy Implications [38]

Limitations of space do not permit me to develop in detail the policy implications which I would draw from Dr. Tucker's or our results. But to avoid further misunderstanding, some brief comments are needed.

Our study was begun during the fall of 1949 and completed in the fall of 1950. When asked to testify before the Joint Committee on the Economic Report in January of 1951, a summary table of the results was included in my testimony. In discussing the results in terms of their significance for the pending tax investigation,[39] I argued: (a) that the bulk of the yield needed to meet the inflation pressures of a high level defense budget must come from spending units with income under, say, $10,000 or $15,000; (b) that, given the existing distribution of consumer spending over this range, this is no excuse for the general sales tax approach of treating indiscriminately all spending units in the lower brackets; (c) that the indiscriminate approach to the taxation of low and middle bracket incomes is particularly undesirable on equity grounds since real progression in the tax structure does not seem to start until the $6,000 or $7,000 level is reached; (d) that the principle of progression should apply over the lower and middle range as much as over the upper range, although in the past we have been concerned mostly with the latter; and (e) that tax legislation can

[38] Responsibility for the remarks of this section, which are a matter of personal judgment, rests with Mr. Musgrave only.

[39] *Hearings before the Joint Committee on the Economic Report*, 82d Cong., 1st sess., January 22 to February 2, 1951, pp. 337 ff., especially p. 341.

be such as to meet the inflation problem without worsening the distribution of the tax load over this range.

Assuming that one accepts the principle of progression, which is a matter of social philosophy and not science, these conclusions seem reasonable to me. As to the existing (1948) tax structure, the data as I read them show surprisingly little progression in burden distribution up to the $5,000-$7,500 bracket. These results, for the reader's convenience, are assembled in Table 8.

TABLE 8

SPREAD IN EFFECTIVE RATE POINTS WITH REVISED DISTRIBUTION OF TAXES *

With Effective Rates Based on:	Including Payroll Taxes		Excluding Payroll Taxes	
	$1,000–$2,000 to $5,000–$7,500	$2,000–$3,000 to $5,000–$7,500	$1,000–$2,000 to $5,000–$7,500	$2,000–$3,000 to $5,000–$7,500
1. Income series, Initial Study	24.0 to 25.4	26.6 to 25.4	21.1 to 23.8	21.7 to 23.8
2. Broader income series	20.5 to 23.8	24.4 to 23.8	18.0 to 22.3	20.0 to 22.3

* Source: Table 2 above, lines 1, 2, 4, and 5.

To exclude all the difficulties which arise in connection with the first bracket, let us begin with the second bracket. Also, let us exclude the top bracket, because it is obvious that rates rise sharply somewhere above the $5,000-$7,500 level.

Including social security taxes, and using our narrower income concept, we find an increase of 1.4 percentage points between the $1,000-$2,000 and the $5,000 to $7,500 bracket. This increase comes entirely between the $1,000-$2,000 and the $2,000-$3,000 bracket. The effective rate falls by 1.2 percentage points from the $2,000-$3,000 to the $5,000-$7,500 range. While no great importance should be given to this element of regression, the entire picture is certainly one of proportional tax distribution over the middle range. Use of the broader income concept shows a somewhat sharper step-up in rate from the second to the third bracket, but still no progression over the $2,000-$3,000 to $5,000-$7,500 ranges.

If we consider the picture excluding social security taxes, and using the narrower income concept, the increase in effective rate is 2.7 percentage points between the $1,000-$2,000 and $5,000-$7,500 brackets, and 2.1 percentage points between the $2,000-$3,000 and the $5,000-$7,500 brackets. Using the broader income concept, the respective differentials are 4.3 and 2.3 percentage points.

In both these respects (i.e., narrower vs. broader income concept, and inclusion of social security taxes vs. exclusion of social security taxes) there is room for debate. As to the first, and for reasons mentioned above, I prefer to give more weight to the narrower concept. As to the second, a partial inclusion may be the answer. As I read the over-all picture, it is far from bearing out Dr. Tucker's main conclusion that "the national tax structure is highly progressive in the matter of rates from $1,000 up." [40] But this, perhaps, is a

[40] See Tucker, *op. cit.*, p. 283.

matter of personal judgment, although it is my impression that I am rather closer to the common usage of the term "highly progressive." [41]

Since it would have been impossible to submit our entire study to the Joint Committee, only a summary presentation could be given. While my interpretation of the data was correct, it would have been better to combine the findings of the first two brackets for this purpose. Thereby, it might have been possible to avoid an overemphasis given in some cases to our findings of regression at the lower end, a feature which is not a particularly reliable part of our results.[42] At the same time, the general policy conclusions, summarized above, seem to me to apply whether or not the first brackets are combined. Indeed, they apply whether we use Dr. Tucker's or our results for the tax distribution part of the problem.

It is difficult, whenever such data are presented, to avoid all misunderstandings. Some may conclude that estimates of this kind, therefore, should not be offered at all. I do not believe so. The need for tax legislators to act, unfortunately, does not wait for the millenium when scientifically incontestable information on such matters will pour forth from supercalculators. Decisions must be made *now*, and this being the case, it is important for students of taxation to offer for discussion such data as can be provided. Of course, the procedure and assumptions must be stated with the results, a rule which was adhered to in great detail in our study. The points of similarity in Dr. Tucker's and our results help to show that the problem is not hopeless, and the elements of disagreement serve to indicate the directions in which further research is needed.

[41] As I have shown in another connection, the technical definition of "degree" of progression is in itself a very difficult matter. See R. A. Musgrave and Tun Thin, "Personal Income Tax Progression," *Journal of Political Economy*, December, 1948.

[42] Such overemphasis appears on p. 14 of *The Economic and Political Hazards of an Inflationary Defense Economy*, Joint Economic Committee Print, 82d Cong., 1st sess. But, as noted in the text, the policy implications remain if the first two brackets are combined. I fully agree with the conclusion that "the results obtained . . . show that upon the low brackets are ultimately shifted so large a proportion of the total tax burden as to make the proportion of income going for taxes much larger in their case than is popularly known." This latter quotation is from *Joint Economic Report*, 82d Cong., 1st sess., Senate Report No. 210, p. 56.

APPENDIX A

Derivation of Imputed Income Series

The income components which are added to S.R.C. series in order to obtain the broader income concept (lines 4 and 5 of our text Table 1) are obtained from a study by Selma Goldsmith, in *Studies in Income and Wealth*, National Bureau of Economic Research, Vol. 13, Tables 1 and 2, pp. 277-279 and p. 284.

Of the total items accounted for by Mrs. Goldsmith in order to move from "Survey income" to the Department of Commerce concept of personal income, items 17, 18, and 27 of S. Goldsmith, Table 1, are taken to be included in the S.R.C. concept. Items 9, 10, 13, 19, and 25 of S. Goldsmith, Table 1 are not allowed for in our adjustment because they were not considered appropriate. The other lines of S. Goldsmith, Table 1 are included in lines 4 and 5 of our text Table 1. After these adjustments are made, the S.R.C. total of $176 billion is raised to $191.1 billion. Items considered inappropriate for inclusion amounted to $2.0 billion (S. Goldsmith, Table 1) plus another $3.4 billion of adjustment for revision of population estimates (S. Goldsmith, Table 2). This leaves an unexplained difference of $15.4 billion to complete reconciliation with Department of Commerce personal income total of $211.9 billion.

With regard to line 16 of Table 1 in the Goldsmith study, only $3.5 out of $3.7 billion were included to eliminate $.2 billion of estimated services

to government. The breakdown of the $3.5 billion into insurance and noninsurance components is based on information obtained from the Department of Commerce.

The items included in line 4 of our text Table 1 are: civilian earnings of persons entering the armed forces ($.6 billion) and persons dying during the year ($.7 billion), S. Goldsmith, Table 1, lines 11, 12. These were distributed according to Appendix Table I, lines 15 and 16 respectively. Also it includes value of change in farm inventories, S. Goldsmith, Table 1, line 24, amounting to $1.3 billion and distributed according to Appendix Table I, line 4.

The items included in line 5 of our text Table 1 are: undistributed fiduciary income, S. Goldsmith, Table 1, line 14 plus line 15, amounting to $.4 billion and distributed according to Table 1, line 6, Initial Study; value of services furnished individuals without payment by financial intermediaries, insurance component, S. Goldsmith, Table 1, line 16 (part), amounting to $1.7 billion and distributed according to Appendix Table I, line 1; value of services furnished individuals without payment by financial intermediaries, noninsurance component, S. Goldsmith, Table 1, line 16 (part), amounting to $1.8 billion and distributed according to Appendix Table I, line 2; imputed rent on owner-occupied nonfarm dwellings, S. Goldsmith, Table 1, line 21, amounting to $2.1 billion and distributed according to Appendix Table I, line 3; nonmoney income of farm operators, S. Goldsmith, Table 1, line 22, amounting to $3.9 billion and distributed according to Appendix Table I, line 7; nonmoney wages and nonmoney nonfarm entrepreneurial income, S. Goldsmith, Table 1, line 23, amounting to $2.0 billion and distributed according to Appendix Table I, line 5; and accrued interest on unredeemed U. S. government bonds, S. Goldsmith, Table 1, line 26, amounting to $.6 billion and distributed according to Appendix Table I, line 6.

APPENDIX TABLE I

New Series

	Spending Unit Income Classes (Thousands of dollars)							
	Under $1,000	1–2	2–3	3–4	4–5	5–7.5	7.5+	Total
1. Insurance premiums paid ...	3.0	7.0	14.0	20.0	15.0	19.0	22.0	100.0
2. Value of checking accounts..	6.5	12.4	14.5	16.7	12.1	19.2	18.6	100.0
3. Housing expenditures of home owners	3.5	5.4	13.7	21.0	19.3	19.7	17.4	100.0
4. Farm money income	5.2	11.1	15.3	11.6	10.1	23.9	22.9	100.0
5. Nonmoney income of single-person spending units	27.8	27.6	27.6	10.5	2.6	2.6	1.3	100.0
6. A–F bond holdings	2.6	8.1	15.8	18.1	15.6	20.7	19.1	100.0
7. Farm nonmoney income ...	22.4	19.7	17.1	10.1	7.5	13.2	10.1	100.0
8. Covered wage earnings	1.1	10.1	28.5	32.3	17.0	9.8	1.3	100.0
9. Federal Civil Service payroll	...	...	43.9	20.3	16.1	15.7	4.0	100.0
10. State and local Civil Service payroll	.7	8.2	48.9	25.3	9.8	5.7	1.4	100.0
11. Railroad payroll	8.6	13.6	36.9	41.0	...	...	...	100.0
12. Dividends	1.4	2.8	4.4	5.7	4.8	9.5	71.4	100.0
13. Wage and salary income ...	1.2	7.3	18.9	24.6	18.1	17.2	12.8	100.0
14. Housing expenditures of renters	4.6	13.6	22.4	24.6	13.1	13.3	8.4	100.0
15. Civilian earnings of those entering armed forces during year	15.0	40.0	40.0	5.0	...	...	...	100.0
16. Earnings of those dying during year	50.0	30.0	5.0	4.0	4.0	4.0	3.0	100.0

APPENDIX B

New Series

The new series used in our revised study are shown in Appendix Table I, lines 1 to 14.

Line 1

This line is obtained from *Life Insurance Ownership Among American Families, 1950*, Survey Research Center, p. 5, Table 4.

Lines 2, 3, 4, 6, 13, and 14

These series were estimated from data provided to us by the Survey Research Center. The data included previously unpublished details from the 1948 *Survey of Consumer Finances* undertaken by the S.R.C. for the Board of Governors of the Federal Reserve System. We are advised by statisticians of the S.R.C. that the series, while not exact in every detail, adequately indicate the distribution of the variables among the income brackets.

Dr. Tucker's criticism of the Initial Study housing expenditures of home owners and housing expenditures of renters series as being inconsistent with the family unit data on which they were based does not apply to the new series shown in lines 3 and 14 of Appendix Table I which are based on spending unit income.

Line 5

To obtain line 5 we first estimate the distribution of money income of single-person spending units. Our estimate is based on Table 13 in the *Survey of Consumer Finances, Federal Reserve Bulletin*, July, 1949, p. 792. We then obtain nonmoney income to money income ratios for single consumers from the B.L.S. survey on *Spending and Saving in Wartime*, Table 3, p. 71, and apply these to the money income. This series, of course, is not reliable, but no better alternative seemed available.

Line 7

Line 7 is derived by applying estimated ratios of farm nonmoney income to money income based on Department of Agriculture ratios given in Table 1, p. 270, Dr. Tucker's study, to the farm money income of line 4, Appendix Table I. The series is not reliable.

Line 8

The distribution of skilled and unskilled worker and of clerical and sales personnel spending units shown in Table 3, *Federal Reserve Bulletin* for July, 1949, p. 783, was combined into a single distribution (weights as shown in *Federal Reserve Bulletin* for August, 1950, p. 963). An estimated distribution of covered wages was obtained by weighting the percentages of units in the brackets below $3,000 according to the bracket mean and in the brackets above $3,000 by $3,000.

Line 9

Line 9 is estimated from a distribution of number of employees by salary brackets in Federal Civil Service, using the assumption of mean incomes. See U. S. Civil Service Commission, *Annual Report*, 1948, p. 72, Table 11. It is moderately reliable.

Line 10

Line 10 is not based on any direct evidence but is an arbitrary adjustment of line 9, based on the assumption that state and local government wages and salaries are generally lower than federal wages and salaries. It is listed here only to explain our allocation and should *not* be used out of context.

Line 11

For line 11 see the *Annual Report* of the U. S. Railroad Retirement Board, 1948, p. 156.

Line 12

Line 12 is based on a procedure described in our Initial Study, p. 50. The difference between the new and the old series (Initial Study, Table 1, line 15) is due to a revised distribution of dividends of fiduciaries, amounting to $497 million, as against $4,295 million reported by individuals. These are now distributed by liquid asset holdings; formerly they had been allocated entirely to the top income bracket.

Lines 15 and 16

Since the income of aged people, and of young people entering the armed forces may be expected to be distributd differently from the general distribution, and no direct data were available, more or less arbitrary assumptions shown in lines 15 and 16 were made.

APPENDIX C

Explanation of Table 5

The results shown in text Table 5 differ from those of Initial Study, Table 7, lines 7-11 and Table 11, lines 7-11 due to revision of yield totals and revisions in distribution. All new yield totals are based on Table 8 of the 1951 *National Income Supplement* to the *Survey of Current Business*, Department of Commerce. Yield changes may be obtained by comparing Initial Study, Table 2 with the last column of text Table 5 above.

Line 1: Personal Income Tax, Federal

Distribution as in Tucker, *op. cit.*, p. 276, Table 4, line 26, revised yield total.

Line 2: Personal Income Tax, State and Local

Distribution unchanged, yield revised.

Line 3: Corporation Income Tax

Distribution similar to standard case of Initial Study, but (1) the new divided series (Appendix

Table I, line 12) is used for the part falling on shareholders and (2) the new wage and salary income series (Appendix Table I, line 13) is used for backward shifted part. The total is reduced somewhat. The reduction in the forward shifted part is allocated according to Initial Study, Table 1, line 2.

Line 4: Excises, Federal

Unchanged.

Line 5: Excises, State and Local

Slight increase in yield distributed by Initial Study, Table 1, line 2. Otherwise unchanged.

Line 6: Payroll Taxes

The total included in the revised series covers $1,678 million for O.A.S.I.; $519 million for Federal Civil Service Retirement; $640 million for state and local Civil Service retirement; $566 million for Railroad Retirement; $1,236 million for various unemployment insurance schemes; and $69 million for Cash Sickness Compensation Funds. Dr. Tucker's total also includes Government Life Insurance Premiums here excluded. Our earlier series failed to include the amounts of $640 and $69 million just mentioned.

Following the shifting assumptions of the Initial Study, the amounts shifted forward are $560 million for O.A.S.I., $189 million for railroad retirement, and $824 million for unemployment insurance. All these amounts are allowed by Initial Study, Table 1, line 2.

The backward shifted part of O.A.S.I. and the unemployment insurance are distributed according to Appendix Table I, line 8. For Federal Civil Service Retirement the total is allocated according to Appendix Table I, line 9. For State and Local Civil Service Retirement and Cash Sickness Compensation Funds the totals are allocated according to Appendix Table I, line 10. The backward shifted part of Railroad Retirement Insurance is allocated according to Appendix Table I, line 11.

Line 7: Property Tax

The increase in total yield of $63 million was prorated among all items other than 1, 2, 7, 8, 12, and 13 in Table 5, Initial Study, p. 22, these items being those for which direct data had been obtained from non-Department of Commerce sources.

The distribution pattern is unchanged from that shown in the last column of Table 5, Initial Study, except for the following substitutions of series: Appendix Table I, line 12 for Initial Study, Table 1, line 15; Appendix Table I, line 3 for Initial Study, Table 1, line 4; Appendix Table I, line 14 for Initial Study, Table 1, line 5.

REBUTTAL

RUFUS S. TUCKER

AS A RESULT of our controversy Professor Musgrave has changed several of his statistical series, especially the ones on which he based the distribution of social security contributions and taxes falling on wages. He has also accepted my distribution of the federal income tax. These improvements were doubtless due more to his zeal for scientific accuracy than to my persuasive ability. On the other hand, I have come pretty close to accepting his distribution of stockholders, and have adopted from him several other minor distributions derived from S.R.C. material. The net effect has been to bring our results closely together, in so far as the amount of taxes allocated to each money-income class is concerned. (See Table A.)

We are also closely together with regard to the ratio of taxes to the total income of each money-income class except the highest. (See Table B.) There we still differ widely because of his insistence on assigning to stockholders all of the earnings of corporations while crediting them with only 54 per cent of the tax on those earnings. Imputing undistributed profits to stockholders is contrary to the universal practice of accountants, compilers of national income statistics, and tax authorities. Professor Musgrave's citation of the views of Schanz, Haig, and Simons is beside the point. They are eminent scholars and widely regarded as authorities on taxation, but they are not "tax authorities," since they have no authority to tax anyone.

Undistributed profits are not available to stockholders, even if they represent genuine profits to the corporation, which they frequently do not, since to a large extent they are the result of insufficient reserves for depreciation, obsolescence, and costs of inventory replacement. It should be noted that Professor Musgrave includes in his estimate of undistributed profits the $2 billion of inventory valuation adjustment that the Department of Commerce omits from national income.

To the extent that undistributed profits are real, they are not income to the stockholders but unrealized and unrealizable capital gains. If stockholders as a group tried to realize them by selling their stock, the bottom would drop out of the market. If stockholders keep them they may or may not result in higher dividends in later years, but are more likely to result in more jobs, higher wages, and lower prices of the corporations' products than would have prevailed in the absence of undistributed profits.

If Professor Musgrave persists in defying the general practice, he might with some plausibility attribute to the stockholders 54 per cent of corporation profits less inventory valuation adjustment, to balance his 54 per cent attribution of tax. In that case the total amount of corporation income assigned to stockholders would be $18.7 billion instead of $27.8 billion. My method assigns $13.8 billion. The shares of the top brackets under the three methods

would be $13.2, $19.8, and $9.5 billion respectively. The ratio of taxes to total and imputed income in the top bracket would be 41.6 per cent instead of Professor Musgrave's revised figure of 36.4 per cent and my revised figure of 45.5 per cent. Or with equal plausibility he might assign all of the corporation taxes to stockholders to balance his assignment of all their profits. In that case the effective rate of taxation on the top bracket would be 43.1 per cent.

Another procedure, which would certainly understate the tax burden, would be to omit entirely the corporation tax and the income imputed on account of tax and retained earnings and only debit the stockholders with dividends received. This gives on Professor Musgrave's basic figures 38.7 per cent as the ratio of all taxes to total income in the top bracket; on my figures it gives 38.4 per cent. This method, although unsatisfactory in itself, serves to show that Professor Musgrave's ratio of 36.4 per cent is too low.

Obviously the calculated rate of taxation on incomes over $7,500 is subject

TABLE A

ALLOCATION OF TOTAL TAXES TO MONEY-INCOME CLASSES

(As per cents of total)

	Income Class (Thousands of dollars)							
	0–1	1–2	2–3	3–4	4–5	5–7.5	7.5 & over	Total
Including Social Insurance Contributions								
Musgrave	1.9	5.8	13.5	16.5	12.0	14.3	36.1	100.0
Tucker	1.7	5.7	12.6	15.9	12.1	14.7	37.3	100.0
Excluding Social Insurance Contributions								
Musgrave	1.8	5.6	12.0	15.5	11.8	14.5	38.7	100.0
Tucker	1.7	5.5	11.9	15.2	11.7	14.6	39.4	100.0

TABLE B

RATIO OF TOTAL TAXES TO TOTAL AND IMPUTED INCOME OF MONEY-INCOME CLASSES

(As per cents)

	Income Class (Thousands of dollars)							
	0–1	1–2	2–3	3–4	4–5	5–7.5	7.5 & over	Total
Including Social Insurance Contributions								
Musgrave	17.9	20.5	24.4	25.3	24.6	23.8	36.4	27.2
Tucker	18.0	20.6	22.9	24.3	24.7	25.5	45.5	28.9
Excluding Social Insurance Contributions								
Musgrave	16.0	18.0	19.9	21.9	22.3	22.3	35.8	25.0
Tucker	15.8	18.0	19.7	21.1	21.9	23.1	43.8	26.3

to great variations depending on the treatment of retained earnings. Even greater variations would occur if there were different assumptions as to the proportion of corporation tax shifted to others than stockholders, or as to the distribution of stockholders by income classes.

Both Professor Musgrave and I have made many minor adjustments, usually in the direction of greater agreement. I have accepted his suggestion to include in total income $5.7 billion for financial services rendered to individuals without charge, and accrued interest on savings bonds. This accrued interest may be regarded as income because it can be cashed at will, unlike corporations' retained profits. Likewise the increase in farm inventories, which represents goods intended for sale and normally sold within a short time, and is generally regarded as income by accountants, statisticians and tax authorities. My reasons for rejecting his other proposed additions need not be detailed here. If they had been included they would all have reduced the apparent burden of taxes on the lower brackets more than on the upper.

Finally, there are in Professor Musgrave's analysis, as in most other recent discussions of tax incidence, three implicit or explicit assumptions: (1) that taxes should be based on ability to pay, rather than on benefits received from the government; (2) that ability to pay without harmful effects on society increases faster than income; and (3) that highly progressive tax rates, in addition to necessary or conventional exemptions, are not only just but also conducive to the general welfare. All three of these assumptions require closer examination and deserve a higher degree of skepticism than they have recently been receiving.

CONCLUDING NOTE *

R. A. MUSGRAVE and L. FRANE

The preceding discussion has helped to clarify a number of important points. Dr. Tucker and we are now agreed that our distributions of total tax payments are very similar. Table 3 of our Rejoinder shows that this was the case at the outset. Table A of Dr. Tucker's Rebuttal shows that it continues to be the case after various revisions have been made on both sides.

We still disagree on the choice of income concept to which this tax distribution should be applied. Dr. Tucker feels that the effective rate schedule, based on the broader income concept only should be considered. We recognize his important contribution in suggesting the use of the broader concept, but believe that we should consider also the effective rate schedule based on the narrower income concept. Of the two we feel that the latter is the more important. But this is a matter of judgment.

Dr. Tucker and we remain in substantial disagreement regarding the proper treatment of retained earnings and of the unshifted part of the corporation tax. We find nothing in Dr. Tucker's Rebuttal which calls for revision of our previous conclusion that his procedure (of imputing to the shareholder the total unshifted part of the tax, without imputing retained earnings to his income) is conceptually correct only on the assumption that the unshifted part of the corporation tax is reflected fully in reduced dividends. This assumption, we believe, is not warranted by empirical evidence.

We do not follow Dr. Tucker's Rebuttal argument that we should impute to the shareholder a fraction of retained earnings equal to the fraction of the total corporation tax (shifted and unshifted) imputed to him. We do accept the validity in principle of his point that where imputation of retained earnings is called for, the amount imputed should be limited to what may properly be considered retained earnings. But we do not feel that inventory profits should be disallowed, or that depreciation should be raised to replacement cost in an analysis which throughout has been in money rather than in real terms.

* Editor's Note: This Concluding Note refers only to Dr. Tucker's Rebuttal. Professor Musgrave and Miss Frane have not reviewed the article by Drs. Colm and Wald.

THE REVENUE ACT OF 1951: A GENERAL SURVEY

DONALD C. MILLER *

THE REVENUE ACT OF 1951 [1] in its long and stormy course through the House and Senate and unprecedentedly through two conference committees was called many things. It was termed "a historic piece of political cowardice" [2] and "unfortunate from the standpoint of a sound, fair tax system" [3] because it would not raise enough money. On the other hand, in one version or another it was called "probably the most badly devised tax measure in our history" [4] and a "meat-axe approach" [5] for raising taxes. Indeed, the defeat in the House of the first conference committee report was ostensibly because the bill was too severe for one faction and did not raise sufficient revenue for another. It was a "soak-the-poor" or "soak-the-rich" measure depending upon the source of the statement. Even many of those who defended the bill in terms of the necessity for revenue felt that the funds it would raise would come from the wrong sources.

This act, however, makes no new or heretical changes in the traditional pattern of tax legislation to provoke these remarks. In this, the third instalment of the defense economy tax program, as with the previous two, the bulk of the revenue increases will result from rate changes applied to familiar tax bases. According to the estimates of the staff of the Joint Committee on Internal Revenue Taxation, the tax liabilities of the nation will be increased $5,691 million in a full year of operation by the Revenue Act of 1951. The increase in revenue from individual income tax changes is estimated at $2,280 million; from corporate income and excess profits taxes, $2,207 million; and from excise taxes, $1,204 million. The estimated increases in these taxes for fiscal 1952 are $1,190 million, $787 million, and $787 million, respectively, or a total of $2,764 million.

* The author is an economist with the Division of Research and Statistics, Federal Reserve Board, Washington, D. C. The views expressed in this article are those of the author and not necessarily those of the Board.

[1] For a more comprehensive treatment of the Revenue Act of 1951 see the "Summary of the Provisions of the Revenue Act of 1951 as Agreed to by the Conferees," prepared by the staff of the Joint Committee on Internal Revenue Taxation, October, 1951.

[2] "The Tax Bill: A National Defeat," *Fortune*, September, 1951, p. 81.

[3] Statement by President Truman, Press Release, October 20, 1951.

[4] Roswell Magill, Chairman, Committee on Federal Tax Policy, as quoted in *The Commercial and Financial Chronicle*, June 28, 1951, p. 8.

[5] Senator W. F. George, Chairman, Senate Finance Committee, as quoted in The National City Bank, *Monthly Letter*, August, 1951, p. 88.

This addition of some $5.7 billion together with the increased revenue resulting from the Revenue Act of 1950 and the Excess Profits Tax Act of 1950 will add about $15 billion to the annual revenue, a substantial contribution to help mitigate the inflationary pressures facing the nation. The chairmen of the Finance and the Ways and Means Committees have indicated, however, that they feel this is the last feasible increase in the federal tax structure without resorting to new and different measures.

Corporate Income and Excess Profits Taxes

Rate Changes. The new tax bill raises corporate income tax rates to new highs. The new tax rate increases became effective as of April 1, 1951, and will expire April 1, 1954. The normal tax is raised to 30 per cent—five percentage points above the 1950 level. The surtax rate on surtax net income over $25,000 remains at 22 per cent, giving a total rate of 52 per cent compared to the old rate of 47 per cent. Because of the effective date established for these changes, the rates for 1951 will rise to 28¾ per cent on the first $25,000 of corporate net income and to 50¾ per cent on larger amounts. The increases were made retroactive to three-fourths of the year by applying three-fourths of the increase to the entire year's income.

The excess profits tax rate was left unchanged at 30 per cent. This rate, combined with the 52 per cent income tax rate, makes the maximum marginal tax rate on corporate income 82 per cent under the 1951 act, as compared with 77 per cent under the 1950 act. A maximum effective rate on excess profits net income is set at just under 70 per cent by the new ceiling provision contained in the 1950 act. This provision is described in detail in the accompanying article by Mr. Oakes and hence is not further discussed here. Similarly, the revisions made by the 1951 act in the excess profits tax are covered by Mr. Oakes and are omitted from this discussion.

The maximum tax on capital gains was increased from 25 to 26 per cent for corporations as well as individuals, but the effective date for corporations was set at April 1, 1951, as contrasted with an effective date of November 1, 1951, for individuals. This increase, like the corporate rate changes, has a termination date of April 1, 1954. This increase in rates did not appear until the second report of the conferees. The House and Senate conferees differed on this point as well as the determination of tax ceiling levels and the method of increasing rates. The final results of the long deliberation are shown in Table 1 which compares the new law with the rate provisions existing prior to its passage.

Tax Base Changes. Although the rate changes mentioned above account for the bulk of increased revenue, there were changes in the tax status of some organizations as well as miscellaneous provisions which affect the corporate tax base. The law contained provisions extending the allowable percentage depletion provisions and the allowances for mine developmental and exploration expenses, all of which act to decrease the corporate tax base. On the other hand, the law extends the collapsible-corporation provisions of the

1950 act to sales of inventories where corporations have been formed to convert profits on inventory into capital gains rather than show it as ordinary income. Similarly, the provisions of the 1950 act calling for the taxation of the unrelated business income of certain tax-exempt organizations are extended to the unrelated business income of state colleges and universities.[6]

payments to depositors and additions to bad debt reserves until these reserves reach 12 per cent of total deposits. The new act also revokes the tax exemption of many farm cooperatives by taxing them on the same basis that other cooperatives are now taxed—i.e. on earnings not refunded or specifically allocated to the members. It was argued that the tax-free status of these

TABLE 1

COMPARISON OF CORPORATE NORMAL AND SURTAX LIABILITIES AND EFFECTIVE RATES UNDER PRE-1950 LAW, REVENUE ACT OF 1950, AND REVENUE ACT OF 1951

Net Income Subject to Normal and Surtax (Thousands of dollars)	Effective Rates, Combined Normal and Surtax			Percentage Increase in Tax Liability of Revenue Act of 1951 Over	
	Pre-1950	Revenue Act of 1950	Revenue Act of 1951	Pre-1950	Revenue Act of 1950
$ 1	$21.00	$25.00	$30.00	42.86%	20.00%
5	21.00	25.00	30.00	42.86	20.00
10	22.00	25.00	30.00	36.36	20.00
25	23.00	25.00	30.00	30.43	20.00
30	28.00	28.67	33.67	20.24	17.44
40	34.25	33.25	38.25	11.68	15.04
50	38.00	36.00	41.00	7.89	13.89
60	38.00	37.83	42.83	12.72	13.22
75	38.00	39.67	44.67	17.54	12.61
100	38.00	41.50	46.50	22.37	12.05
200	38.00	44.25	49.25	29.61	11.30
500	38.00	45.90	50.90	33.95	10.89
1,000	38.00	46.45	51.45	35.39	10.76
10,000	38.00	46.95	51.95	36.70	10.65
100,000	38.00	46.99	51.99	36.83	10.64

One of the so-called loopholes which caused much controversy in both the House and Senate was the exemption from income taxation accorded to farmers' purchasing and marketing cooperatives, mutual savings banks, and savings and loan associations. The 1951 act subjects mutual savings banks and savings and loan associations to the regular corporate income tax rates after allowances for interest and dividend

[6] The new act specifically provides an exemption for the years prior to January 1, 1951, in the case of educational and hospital feeder organizations, which are now taxable.

institutions discriminated against commercial banks, life insurance companies, and many noncooperative marketing and retailing organizations which are in active competition with the tax-exempt institutions.

Another measure designed to minimize tax avoidance was the denial of the minimum excess profits credit of $25,000 and the $25,000 exemption from the corporate surtax when property was transferred by a corporation to a newly created or previously inactive corporation after December 31,

1950, provided that the transferee corporation remained under the control of the transferor or its stockholders. When such transfers are made, the above credit and exemption are denied to the transferee corporation unless it can show that the securing of these tax benefits was not a major motivation for the transfer.

Revenue Effects. The staff of the Joint Committee on Internal Revenue Taxation estimates that the changes in corporate tax rates will bring in a total of $2,545 million annually. Since these changes will decrease the flow of dividends to individuals, thereby reducing individual income tax collections, the net increase in revenue due to the corporate rate changes is estimated to be $2,343 million.

The net effect of the many structural changes in the corporate income and excess profits taxes was a decrease in revenue of $136 million. Although the provisions for the taxation of life insurance companies, formerly tax-exempt organizations, and closely related corporations will result in increased receipts, the allowances for depletion, mine exploration expenditures, adjustment for back mail pay of railroads, credits for taxes paid by foreign subsidiaries of domestic corporations and the excess profits tax relief provisions will all result in decreased revenue—with the net result of a decrease of $136 million. The estimated net increase to be received from corporate income and excess profits taxes after all changes, therefore, is $2,207 million.

Individual Income Tax

Rate Changes. Increases in tax rates account for most of the additional revenue obtained from the individual income tax since the beginning of the Korean emergency. The Revenue Act of 1950 merely removed some of the percentage reductions of 1945 and 1948 and represented a return to the tax rates of former years. The 1950 act, however, seemingly exhausted this method of sugarcoating the rate increases, for little was said of returning to the higher surtax levels of 1944 in connection with the 1951 legislation. Instead the House bill referred to the rate increases as a special "defense" tax—implying a temporary measure over and above existing rates. The Senate was more concrete and specified a termination date of December 31, 1953, for the increases, a provision that was incorporated in the act.

The increase in the individual rates ranges from 11 to 12 per cent above 1950 tax levels for the income groups into which most of the nation's taxpayers fall. Table 2 shows these increases of the new law, relative to the 1950 law. For higher income levels an alternative tax of 9 per cent on surtax net income after existing taxes was adopted which is advantageous to the taxpayers at these levels. The effective rate limitation or ceiling on the combined normal tax and surtax was raised from 87 per cent to 88 per cent. The effective date of the tax increase was November 1, 1951, on which date the withholding rates increased from 18 to 20 per cent. For 1951, tax tables that apply about one-sixth of the percentage increase to the entire year's income will be used, but for 1952 and 1953 the full percentage increase is applicable. The new law also increases the tax on capital gains from 25 to 26 per cent, effective November 1, 1951.

This increase will not be in effect as long as the individual rate changes since it expires November 1, 1953.

Tables 3 and 4 show the amount of the tax, the marginal rates, and the effective rates for a single person and for a married couple with no dependents for selected income levels under the 1950 act and the 1951 act. The marginal rates show the level of the combined normal tax and surtax for specified incomes, and these rates as well as the effective rates show the effect of income splitting. The rapid progression to higher rates that exists for a single person is shown by Table 3.

TABLE 2

TAX INCREASES, REVENUE ACT OF 1951, OVER REVENUE ACT OF 1950, FOR MARRIED COUPLE, NO DEPENDENTS *

Net Income Level (Thousands of dollars)	Tax Increase		Tax Increase as Percentage of:	
	Amounts (Dollars)	Effective Rates (Per cent)	Revenue Act of 1950 Tax	Net Income after Revenue Act of 1950 Tax
$ 2	$ 17.60	.88%	11.00%	1.0%
3	39.60	1.32	11.00	1.5
4	61.60	1.54	11.00	1.8
5	83.60	1.67	11.00	2.0
8	160.80	2.01	11.36	2.4
10	216.00	2.14	11.44	2.7
15	384.00	2.59	11.78	3.3
20	584.00	2.88	11.99	3.9
25	784.00	3.13	11.66	4.3
50	2,288.00	4.56	11.68	7.5
100	4,156.00	4.13	7.00	8.8
500	8,780.00	1.77	2.18	9.1
1,000	13,780.00	1.33	1.61	9.7

* The increases in this table refer to taxes resulting from a full year of operation of the Revenue Act of 1951 and not to the partial changes of the year 1951.

TABLE 3

COMPARISON OF TAX AMOUNTS AND TAX RATES, SINGLE PERSON, NO DEPENDENTS, REVENUE ACT OF 1950, AND TAX REVENUE ACT OF 1951

Income Level (Thousands of dollars)	Revenue Act of 1950			Revenue Act of 1951		
	Tax * (Dollars)	Marginal Rate † (Per cent)	Effective Rate * (Per cent)	Tax * (Dollars)	Marginal Rate † (Per cent)	Effective Rate * (Per cent)
$ 1	$ 80	20.0%	8.0%	$ 89	22.2%	8.9%
2	280	20.0	14.0	311	22.2	15.5
3	488	22.0	16.3	542	24.6	18.1
4	708	22.0	17.7	788	24.6	19.7
5	944	26.0	18.9	1,052	29.0	21.0
8	1,780	30.0	22.3	1,992	34.0	24.9
10	2,436	34.0	24.4	2,728	38.0	27.3
15	4,448	47.0	29.7	4,948	53.0	33.1
20	6,942	53.0	34.7	7,762	59.0	38.8
25	9,796	59.0	39.2	10,940	66.0	43.8
50	26,388	72.0	52.8	28,466	75.0	56.9
100	66,798	87.0	66.8	69,688	88.0	69.7
500	429,274	91.0	85.9	436,164	92.0	87.2
1,000	870,000	91.0	87.0	880,000	92.0	88.0

* Net income (after deductions, before exemptions).

† Surtax net income (after deductions and exemptions).

Under the new law, for example, a single person at the $10,000 income level is affected by a 38 per cent marginal tax rate and pays over $2,700 in taxes. A married couple with no dependents, however, is subject to a 29 per cent marginal rate and pays about $2,100 in taxes. At the $50,000 level there is almost a $7,000 advantage resulting from income splitting which accrues to married couples.

publicity has been focused on the relation of the tax increases to the amount of taxes already assessed under the 1950 act. But, as I shall attempt to show below, this is not the most meaningful way of appraising the significance of these increases.

The original Treasury proposal was that a flat four-percentage-*point* increase be made in all rate brackets. This proposal would have raised rel-

TABLE 4

COMPARISON OF TAX AMOUNTS AND TAX RATES, MARRIED COUPLE, NO DEPENDENTS, REVENUE ACT OF 1950, AND TAX REVENUE ACT OF 1951

Income Level (Thousands of dollars)	Revenue Act of 1950			Revenue Act of 1951		
	Tax * (Dollars)	Marginal Rate † (Per cent)	Effective Rate * (Per cent)	Tax * (Dollars)	Marginal Rate † (Per cent)	Effective Rate * (Per cent)
$ 2	$ 160	20.0%	8.0%	$ 178	22.2%	8.88%
3	360	20.0	12.0	400	22.2	13.32
4	560	20.0	14.0	622	22.2	15.54
5	760	22.0	15.2	844	24.6	16.87
8	1,416	22.0	17.7	1,577	24.6	19.71
10	1,888	26.0	18.9	2,104	29.0	21.04
15	3,260	30.0	21.7	3,644	34.0	24.29
20	4,872	34.0	24.4	5,456	38.0	27.28
25	6,724	43.0	26.9	7,508	48.0	30.03
50	19,592	59.0	39.2	21,880	66.0	43.76
100	52,776	72.0	52.8	56,932	75.0	56.93
500	403,548	91.0	80.7	412,328	92.0	82.47
1,000	858,548	91.0	85.9	872,328	92.0	87.23

* Net income (after deductions, before exemptions).

† Surtax net income (after deductions and exemptions).

The effective rates shown in Tables 3 and 4 represent the accumulated rates on all income up to a particular income level, and thus show the average rate at which the entire income is taxed. The effective rates are based on net income, and the effect of the exemptions (two in Tables 2 and 4) on tax liability is reflected in these rates.

The proper distribution of the tax increases among income brackets has been a subject of much controversy, both during and since the enactment of the 1951 revenue bill. Most of the

atively more additional revenue from the low income classes than from the higher income classes. As shown in column four of Table 2, for example, the tax increase would have amounted to 20 per cent of the 1950 tax for a married couple at the $2,000 level and to only 10 per cent at the $50,000 level.

The House and Senate, however, followed a different principle—that of maintaining approximately the existing degree of progressivity over most of the income range. The House and Senate bills increased the tax liabilities by a

nearly constant *percentage* of their former amounts over most income brackets rather than by a flat number of percentage points. As finally enacted, the 1951 act increased the existing levels of tax liabilities by between 11 and 12 per cent for all except the very top brackets. The increases were much smaller in the very top brackets, as shown in Table 2, because of the alternative method of computing the tax increase which was inserted by the Senate. The alternative method, as indicated above, limited the tax increase to 9 per cent of the surtax net income remaining after deducting the amount of the tax under the 1950 tax rates. A look at the high tax rates already imposed at the top income levels reveals the need for the smaller percentage increases in tax liabilities at these income levels.

A much more meaningful way of evaluating the 1951 tax increases is as a percentage of surtax net income remaining after 1950 taxes. These percentages, computed in the last column of Table 2, show that the 1951 increases are progressive throughout the entire range of incomes. They also show that, if an 11 per cent increase in existing tax liabilities had been applied to the top-bracket incomes, the percentage reduction of income remaining after taxes would have been such as to approach confiscation. If, for example, tax rates had been increased by 11 per cent of their 1950 levels in all brackets, a single individual with an income of $100,000 would have been subjected to a marginal tax rate of 96.6 per cent. If the 88 per cent ceiling rate is disregarded, any taxpayer subject to the top marginal rate of 91 per cent under the 1950 act would have had this rate raised to over 100 per cent by an 11 per cent increase in tax rates over 1950 levels. In other words, it would have been mathematically impossible to have maintained strictly proportional increases in tax liabilities of as much as 11 per cent throughout the rate scale, given the high marginal tax rates already in effect in 1950.

The effect of the individual income rate changes of the Revenue Act of 1951 on the distribution of adjusted gross income after individual income taxes is shown in Table 5. The distribution of this income after the application of the individual income tax rates for 1950 and for 1951 shows little change. This would indicate that the 1951 rate changes did not greatly alter the progressivity of this part of the federal tax structure. The slight change that did occur shows that taxpayers with adjusted gross incomes of over $5,000 would receive a smaller proportion of total adjusted gross income after allowing for tax liabilities under the new law than they would have received under the 1950 act. This finding also indicates that expression of the new tax burden in terms of the relation of the tax increases to existing taxes does not adequately measure the progressivity of the new legislation.

Tax Base Changes. Some of the provisions mentioned in this section have implications for the equity of the tax law that are of more significance than their revenue effect. As in the case of corporate taxation, the individual income tax rate changes are more important revenuewise than the various tax base changes. Most of the so-called structural changes in the individual income tax will reduce the

TABLE 5

ESTIMATED DISTRIBUTION OF INDIVIDUAL INCOME TAX RETURNS, ADJUSTED GROSS INCOME, AND ADJUSTED GROSS INCOME AFTER 1950 REVENUE ACT AND 1951 REVENUE ACT INDIVIDUAL INCOME TAXES

Adjusted Gross Income Class (Thousands of dollars)	Total Number of Taxable Returns	Adjusted Gross Income Class	Distribution of Adjusted Gross Income after Effect of Revenue Act of 1950		Distribution of Adjusted Gross Income after Effect of Revenue Act of 1951	
	(Thousands of dollars)	(Millions of dollars)	(Millions of dollars)	Per cent	(Millions of dollars)	Per cent
Under $1	$ 1,868.1	$ 1,556	$ 1,502	.95%	$ 1,496	.97%
$1–2	6,991.1	10,875	10,033	6.41	9,941	6.45
2–3	10,908.0	27,275	25,030	15.98	24,783	16.07
3–4	9,830.8	33,462	30,591	19.53	30,275	19.63
4–5	6,262.8	27,905	25,233	16.11	24,940	16.17
Total under 5	35,860.8	101,073	92,389	58.98	91,435	59.29
5– 10	6,645.7	42,850	37,770	24.11	37,213	24.13
10– 25	1,342.8	19,470	15,982	10.20	15,591	10.11
25– 50	247.1	8,200	5,911	3.77	5,661	3.67
50– 100	70.1	4,675	2,813	1.80	2,636	1.71
100– 250	18.3	2,559	1,283	.82	1,205	.78
250– 500	2.0	647	269	.17	256	.17
500–1,000	.5	316	124	.08	119	.08
1,000 and over	.2	310	104	.07	100	.06
Total over 5	8,326.7	79,027	64,256	41.02	62,780	40.71
Total	44,187.5	180,100	156,645	100.00	154,215	100.00

Source: Derived from "Summary of the Provisions of the Revenue Act of 1951 as Agreed to by the Conferees" prepared by the staff of the Joint Committee on Internal Revenue Taxation, October, 1951, Table 6, p. 7.

tax base and the amount of revenue received.

Although the new act provides new surtax tables for those persons qualifying as "heads-of-households," this change in the law is in effect a change in the tax base rather than tax rates. Both the Senate and House recommended preferential treatment of single persons who maintained households for others and thus in effect were in a similar position to married couples who benefit from the income splitting provisions of the law. For those taxpayers qualifying as "heads-of-households" the act provides special surtax rates designed to give approximately one-half of the benefits of income splitting now available to husbands and wives. This in effect reduces the tax base and is one of the more important changes that will reduce receipts. (The House bill contained the provision as enacted, while the Senate voted to give only one-fourth of the benefits of income splitting.)

The most important structural change from the standpoint of reducing revenue, however, is the provision allowing the gain from the sale or exchange of taxpayer's residence to be offset by the cost of purchase or construction of a replacement dwelling. Such gains were formerly taxed as capital gains but now under specified conditions will be tax-free.

Both the Senate and House committees felt that the existing law resulted in hardship when a personal residence was sold at a gain which was taxed as a capital gain, and then a replacement residence was purchased at

a price similar to the sales price of the former residence. The new law provides that the gain is to be recognized only to the extent that the selling price of the old residence exceeds the cost of the new if the purchase of the new residence follows the sale within a year. The new residence must be used within one year after the sale of the old residence except in the case of a newly constructed residence. Then construction must start within one year after the sale, and the new house must be used as the principal residence within 18 months.

A number of changes in the new law which resulted in a reduction in the tax base were adopted in order to eliminate hardship or provide some measure of relief. The act removes the limitation on the amount of medical expenses that are deductible from adjusted gross income for taxpayers and their spouses if they are 65 years of age or older. The provision waiving taxes on the pay of enlisted men and the first $200 of commissioned officers' pay in combat zones was extended to January 1, 1954, and it was also made applicable to the pay of military personnel while in hospitals as a result of wounds or injuries received in the combat zone. Military personnel dying from such injuries are forgiven their income tax liability for the year of their death and the prior year. This provision also is effective until January 1, 1954.

Other base-reducing provisions are the relaxation of the law concerning the establishment of family partnerships; the increase in the allowable earnings of dependents; the liberalization of the exclusions allowed individuals earning income abroad; the greater freedom allowed taxpayers in the use of standard or itemized deductions and joint or separate returns; and the extension of capital gains treatment to gains realized on sales of certain kinds of livestock and to gains represented by the value of unharvested crops sold along with the land on which they were growing.

The new act modified that section of the Revenue Act of 1950 which permitted the redemption of stock in a decedent's estate to pay death taxes without the payment of income taxes on such dividends. The provision was limited under the 1950 act to cases in which the stock comprised 50 per cent or more of the *net* estate. Under the new law the benefits of this section are applicable where the stock comprises more than 35 per cent of the decedent's *gross* estate.[7]

One of the few structural changes resulting in a larger base was the adoption of new methods of offsetting short and long-term capital gains and losses. The effectiveness of short-term losses in wiping out long-term gains of twice the size was removed. The new law also requires dealers in securities to identify securities held for investment purposes within 30 days after their acquisition in order to qualify for capital gains treatment. Gains on securities held by a taxpayer in his capacity as a dealer are taxed as ordinary income. This change will limit the shifting of securities from investment accounts to personal accounts in an effort to reduce tax liabilities.

Revenue Effects. Estimates of the revenue increases from the individual

[7] In effect, this change increases the amount of stock that a married person must have to qualify if he uses the marital deduction allowed by the estate tax law.

income tax rate changes for a full year of operation are $2,485 million. Decreases in revenue of over $200 million because of the net effect of the various tax base and structural changes leave a net increase from individual income tax changes of some $2,280 million. The provisions which are most important in reducing the tax base are the " head of household " allowance and the alleviating measures applied to the taxation of gains from the sale of houses.

Excise Taxes

Rate Changes. With one exception, the pattern of excise taxation was not greatly changed by the Revenue Act of 1951. The one important innovation was the imposition of a 10 per cent excise on wagers placed with lottery operators and bookmakers and a $50 per year occupational tax on those engaged in this business. The remainder of the changes were concerned for the most part with increases in the rates of existing excises, the most important of which are shown in Table 6, and the bulk of the additional revenue to be obtained from excises will come from these rate increases.

The traditionally important revenue producers, excises on liquor and tobacco, are again called upon to provide large additions to receipts. Revenue-wise, however, the changes in the rates of various manufacturers' excises are as important as the liquor and tobacco tax changes. These rate changes were accompanied by the usual floor stock taxes on liquor, tobacco, and gasoline.

Tax Base Changes. The most important base changes are the new measures, mentioned above, imposed upon gambling. This brings the Federal Government into a field of activity with which it has had no previous experience, so the effect of this tax, and thus the base, is unknown.

TABLE 6

EXCISE TAX RATES *

Selected Bases	1951 Revenue Act	1950 Revenue Act
Distilled spirits	$10.50 per gallon	$9.00 per gallon
Wines:		
14% alcohol or less	.17 " "	.15 " "
14%–21% alcohol	.67 " "	.60 " "
21 –24 "	2.25 " "	2.00 " "
Over 24% "	10.50 " "	9.00 " "
Champagne or sparkling wine	.17 half-pint	.15 half-pint
Beer	9.00 per barrel	8.00 per barrel
Cigarettes	.08 per pack	.07 per pack
Snuff, smoking and chewing tobacco	.10 per lb.	.18 per lb.
Gasoline	.02 per gallon	.01½ per gallon
Diesel fuel	.02 " "	None
Automobiles and motorcycles	10 per cent	7 per cent
Trucks and busses	8 " "	5 " "
Parts and accessories	8 " "	5 " "
House trailers	None	7 " "
Most sporting goods	15 per cent	10 " "
Cameras	20 " "	25 " "
Photographic film	20 " "	15 " "
Mechanical pencils, fountain and ball point pens, and cigarette lighters	15 per cent	None
Electrical energy	None	3½ per cent

* All percentage tax rates shown are manufacturers' excise taxes.

Most of the tax base changes were made in the manufacturers' excises with some additions and some deletions. Many industrial types of appliances are removed from the list of electric, gas, and oil appliances subjected to a 10 per cent tax; but many new appliances, such as power lawn mowers, electric dishwashers, electric and gas clothes driers, belt-driven fans, mangles, garbage disposals, and others, are added. A 15 per cent manufacturer's tax is imposed on fountain pens, ball-point pens, mechanical pencils, and cigarette lighters. A 2 cents per gallon tax is added to diesel fuel for highway use to place it in the same tax class as gasoline.

Some of the changes in excise taxation which resulted in a different tax base were also designed to remove inequities or provide favorable treatment to areas where public support rather than repression is desirable. For example, the excises on sporting goods equipment used by children or for school athletic programs are removed, while the excises on most other sporting goods were increased from 10 per cent to 15 per cent. Tires and tubes used on the smaller sized children's toys are exempt from the excise tax. Many powders, lotions, and baby oils (referred to as " necessities ") are removed from the list of toilet preparations subject to the 20 per cent retail tax. High school sporting events and entertainment, civic symphonies, municipal swimming pools, and operas were all exempted from the 20 per cent admission tax. It was felt that the type of activity or product involved was such that it deserved special treatment relative to other more " commercial " activities or products.

The 3⅓ per cent tax on private vendors of electrical energy sold to domestic or commercial consumers was repealed because of its regressive nature, difficulty of administration, and discrimination between private and public utilities. Some products were also added to the list of taxable items to correct inequitable situations. Thus clothes driers, mangles, dishwashers, and belt driven fans were added to the list of appliances subject to a 10 per cent manufacturers' tax because they were viewed as being directly or at least indirectly competitive with other appliances. On the other hand, vacuum cleaners and washing machines were excluded from this list although they also would qualify as " indirectly competitive." Garbage disposal units were added to the taxable items in the revised conference committee report at the time that children's skates were removed. This action appeared to be consistent with many of the earlier changes made by the House and Senate.

Revenue Effects. Table 7 shows the estimates of the staff of the Joint Committee on Internal Revenue Taxation for the excise tax changes on a yearly basis at the levels of production and consumption estimated for fiscal 1952. These changes were made as of November 1, 1951, and will expire April 1, 1954, with the exception of the increases in occupational taxes on liquor dealers and coin-operated gaming devices, which are permanent. It should be noted that the estimate on the gambling tax receipts, which makes up one-third of a full year estimate, is highly conjectural because of the lack of experience in this area of taxation. Occurrences since the estimate was made

have indicated that it is too high. To date there has been little indication that the members of this industry will comply with the new law, and many have stated that they will be forced out of business.

TABLE 7

ESTIMATED REVENUE EFFECT OF EXCISE TAX CHANGES

(Millions of dollars)

Tax	Revenue Effect
Alcoholic beverages	$ 252
Tobacco products	156
Manufacturer	428
Retail	– 7
Transportation and communication	– 14
Amusement and recreation	– 18
Gambling	407
Total	$1,204

Areas of Special Controversy

One of the most controversial and also most important equity features of the new tax legislation was its prospective anti-inflationary influence. The amount of the revenue gains mentioned above and their effectiveness in curtailing consumer expenditure are equity factors as well as any changes in the marginal rates affecting the various income classes. The ravages of inflation upon particular segments of the economy are well known but difficult to control or mitigate once under way. A rational tax program which provides more revenue by intensifying the existing tax pattern will result, however, in a more equitable distribution of the unavoidable burden of defense and war mobilization than will the inflation which would replace a given kind and amount of taxation.

In addition to the broad, over-all implications of the act for the distribution of the defense burden, there were several specific features which were designed to remove or alleviate inequities in the existing law. Some of these changes which have been mentioned above will result in revenue losses while others, by " plugging loopholes " in the existing tax system, will bring in additional revenue.

There are some provisions of the act and also some actions that were not taken by the act which have been the subject of much additional controversy. It has been charged that the provision for additional depletion allowances and the handling of family partnerships as well as the omission of a withholding tax on dividends, interest, and royalties and of a more severe tax on capital gains have provided new loopholes or have continued existing loopholes in the law.

Percentage depletion allowances have been broadened under the act to include a group of nonmetallic minerals which were described by the committee reports as " competitive " with others already enumerated in the law. The percentage depletion on coal was increased from 5 per cent to 10 per cent. These allowances as well as those on oil and gas have been called excessive by some critics.

Family partnerships have been used in the past to avoid the higher tax rates by splitting of income. Much litigation has arisen over the establishment of family partnerships for such purposes where the services of one partner are not a material income-producing factor. The new law provides that a person may be a partner for tax purposes after December 31, 1950, if he owns capital which is a material income-producing factor, whether he received the

property by purchase or by gift. This feature of the law will enable taxpayers to split income for tax purposes more readily than before.

The bill as passed by the House contained a provision for a withholding tax of 20 per cent on interest, dividends, and royalties. The House advocated this measure to cope with the large volume of underreporting of these income components and thus to extend equal coverage to more kinds of income. The Senate Finance Committee called this a drastic solution which would work a great hardship on many taxpayers such as those with no income tax liability. The conferees did not report out such an amendment.

The capital gains provisions existing in the United States have been called excessively liberal. A small change was made here by the conferees in an effort to obtain a bill that would pass the second House vote. The alternative capital gains tax rate was increased from 25 to 26 per cent for taxable years beginning after October 31, 1951. The House bill had increased this rate to 28⅛ per cent to correspond with the 12½ per cent increase in individual income tax rates. The Senate, however, argued that high rates tend to discourage the realization of gains and that over-all considerations required continuation of the existing ceiling rate. The act also provided that 100 per cent of capital gains and losses are to be taken into account so that a $1 short-term capital loss can no longer offset a $2 long-term capital gain.

The new law also contains one provision affecting the reorganization of corporations which has appeared in similar form in some of the versions of earlier revenue acts but was not adopted until the 1951 act. In it an effort has been made to eliminate the inconsistent tax treatment of "split-ups," "split-offs," and "spin-offs." The new act provides for the tax-free reorganization of corporations by means of a "spin-off." A corporation may now transfer some of its assets to a new corporation and then distribute the stock (other than preferred) of the new corporation to the shareholders of the original corporation without the surrender by the shareholders of stock in the original corporation. This action may be taken without recognition of gain or loss to the shareholders if both the new and the old corporation intend to carry on business after the reorganization and if the reorganization was not used as a device to distribute the earnings of the corporation. An adjusted basis for the old stock must be determined by an allocation between the old stock and the new stock for purposes of determining future gains and losses.

THE REVENUE ACT OF 1951: EXCESS PROFITS TAX AMENDMENTS

EUGENE E. OAKES *

I. Introductory Statement

THE REVENUE ACT of 1951 [1] includes a reduction from 85 to 83 in the percentage of the average base period net income which is used in computing the credit based on income under the excess profits tax law, a revision and increase in the so-called ceiling rate, and a group of 24 structural amendments to the excess profits tax law, 12 of which relate to the general relief problem discussed in the September, 1951, issue of this *Journal*.[2] All but one of the structural amendments were given retroactive application to June 30, 1950, the effective date of the original law.

These changes in the excess profits tax law were not sponsored by the administration. While the Presidential Message on taxation [3] included a request for an increase of $3 billion in corporate tax liabilities, it was suggested that action on the excess profits tax be deferred until the first returns under the law had been received and analyzed. This recommendation was repeated by the Secretary of the Treasury.[4] The only one of the Secretary's suggestions which affected the excess profits tax law was an increase of eight points in the ceiling rate, and this was an adjustment for a proposed increase of a like number of points in the corporate normal tax rate.

The Committee on Ways and Means increased the normal tax rate by only five points, but made up for a portion of the difference in yield by reducing from 85 to 75 the percentage of base period earnings used in computing the credit based on income under the excess profits tax law. The ceiling rate was raised from 62 to 70 per cent as had been recommended by the Secretary. Of this increase, five points matched the change in the corporate normal tax rate; the remaining three points may be attributed to the change in the credit based on income. This three point increase in the ceiling rate plus the reduction in the income credit were estimated to yield about $732 million in a full

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[1] Public Law 183, 82d Cong., 1st sess.

[2] E. E. Oakes, "General Relief under the Excess Profits Tax," *National Tax Journal*, IV (September, 1951), pp. 219-236.

[3] *Message from the President of the United States Transmitting a Message on Increased Taxation*, H. Document, No. 53, 82d Cong., 1st sess., February 2, 1951.

[4] *Revenue Revision of 1951*. Hearings of the Committee on Ways and Means, Part I, p. 9.

year's operation.[5] The Ways and Means bill included no structural changes in the excess profits tax law.

The Committee on Finance deleted the change in the credit based on income, revised the ceiling rate formula in a manner which will be described below, raised the ceiling so that in effect it approached a combined tax of 69 per cent as a limit, and introduced a series of structural amendments to the excess profits tax law. The increase in the ceiling rate, which under the Finance Committee formula is attributable entirely to the excess profits tax, was estimated to raise tax liabilities by $120 million a year.[6] Since this was also the amount of the estimated revenue loss under the proposed structural amendments, the excess profits tax made no net contribution to the additional revenue provided under the Finance Committee bill.

In explaining its failure to delay the adoption of structural amendments until the first returns could be analyzed, the Committee on Finance called attention to the " great number " of problems concerning the excess profits tax which had been presented at its hearings on the bill and indicated that these problems had been studied by the staff. The Committee also stated that its action had been confined " to those cases which present the most immediate and pressing need for statutory change," and reported that the bulk of the requests for relief had been referred to the staff for study with a view to possible action early in 1952.[7]

Two more structural changes were added to the bill before it was finally enacted: a small reduction in the percentage used to compute the credit based on income was reintroduced; the Finance Committee's formulation of the ceiling was retained, but the ceiling rate was increased so that, in effect, it approached as a limit a combined tax of 70 per cent.

The *Summary* of the final bill indicated that the structural amendments will cost about $107 million annually.[8] The combined result of the changes in the credit based on income and the portion of the increase in the ceiling rate attributable to the excess profits tax was estimated to be a revenue increase of $283 million annually.[9] Thus the net contribution of the excess profits tax to the annual revenue increase under the final bill was only $176 million as compared with $732 million under the House bill.

II. The Revision of the Ceiling Rate

The redefinition of the ceiling rate is designed to reduce the impact of the excess profits tax on the first $25,000 of corporate net income. Under the prior law the ceiling applied to the sum of that part of the corporate normal and surtaxes and the 2 per cent tax on consolidated returns which applied to excess profits net income and the excess profits tax. The combined burden of these four taxes was limited to 62 per cent of the corporation's excess profits tax net income before the deduction of

[5] House Report, No. 586, 82d Cong., 1st sess., p. 13.

[6] Senate Report No. 781, 82d Cong., 1st sess., p. 14.

[7] *Ibid.*, p. 70.

[8] *Summary of the Provisions of the Revenue Act of 1951 (HR 4473) as Agreed to by the Conferees,* Staff of the Joint Committee on Internal Revenue Taxation, p. 46.

[9] *Ibid.*, p. 8.

the excess profits credit which is the presumptive "normal" income. Since the excess profits tax law uses a minimum credit in lieu of an exemption, this formulation of the ceiling had the effect of wiping out the benefits of the $25,000 exemption allowed under the corporate surtax in those cases where the ceiling rate was effective.

Under the new law the ceiling rate is 18 per cent of excess profits tax net income and applies only to the sum of the excess profits tax liability and that portion of the consolidated returns tax which is attributable to the excess profits tax net income.[10] This formulation of the ceiling allows the taxpayer to retain the benefit of the $25,000 exemption allowed under the corporate surtax. It will, therefore, result in a smaller total revenue than an equivalent rate under the original ceiling formula.

Table 1 compares the effective rates of taxation which appear under the new ceiling with those resulting from the use of a 70 per cent rate under the type of formula contained in the original law. The benefits of the change are restricted to corporations with income in excess of $62,500. The maximum percentage point difference between the effective rates appears when the income of the corporation reaches about $108,000.

TABLE 1

COMPARISON BETWEEN THE MAXIMUM EFFECTIVE RATES OF INCOME AND EXCESS PROFITS TAXES UNDER THE CEILING FORMULA USED IN THE ORIGINAL LAW WITH A 70 PER CENT RATE AND THE 18 PER CENT CEILING RATE USED UNDER THE 1951 LEGISLATION

Excess Profits Tax Net Income	Maximum Effective Rates of Income and Excess Profits Taxes		
	70 Per Cent Income and Excess Profits Tax Ceiling	18 Per Cent Excess Profits Tax Ceiling	Percentage Point Difference
	Per cent	Per cent	Per cent
$ 10,000	30.00 *	30.00 †	....
25,000	30.00 *	30.00 †	....
30,000	38.67 *	38.67 †	....
40,000	49.50 *	49.50 †	....
50,000	56.00 *	56.00 †	....
60,000	60.33 *	60.33 †	....
62,500	61.20 *	61.20	....
70,000	63.43 *	62.14	1.29
80,000	65.75 *	63.13	2.62
90,000	67.56 *	63.89	3.67
100,000	69.00 *	64.50	4.50
108,333	70.00	64.92	5.08
150,000	70.00	66.33	3.67
200,000	70.00	67.25	2.75
250,000	70.00	67.80	2.20
300,000	70.00	68.17	1.83
400,000	70.00	68.63	1.37
500,000	70.00	68.90	1.10
1,000,000	70.00	69.45	.55
10,000,000	70.00	69.95	.05
$100,000,000	70.00	69.99	.01

* As a result of the $25,000 surtax exemption and the $25,000 minimum credit, the maximum effective rate on income and excess-profits tax liabilities is always less than 70 per cent for corporations with incomes below $108,333.

† As a result of the $25,000 minimum excess-profits tax credit, the maximum effective excess-profits tax rate for corporations with incomes below $62,500 is always less than 18 per cent.

SOURCE: This is a condensed version of a table which appears on p. 11 of the *Summary* of the conference bill.

III. CHANGES IN THE GENERAL RELIEF PROVISIONS

A. New Corporations

From the point of view of the revenue loss involved, the most important of the twelve changes in the general relief provisions are two which deal with new corporations. Such corporations present one of the most difficult of the problems which arise under

[10] The 18 per cent ceiling rate applies to taxable years beginning on or after April 1, 1951. A rate of 17¼ per cent is used for the calendar year 1951.

an excess profits tax law. It is unusually hard to determine " normal income " in such cases, particularly since a substantial part of the increase in earnings during the excess profits tax period may represent merely " normal growth."

The original law assumed that under the conditions of a mobilization boom new corporations would reach maturity within a period of three years, and built up an alternative income credit by applying an industry average rate of return to the corporation's total assets at the end of its third year. The regular adjustment for capital additions was relied upon to make the necessary corrections for subsequent growth. This approach produced two major complaints. Some taxpayers alleged that the industry average rate of return was far from representative of their own normal earning capacity. Others complained that they were being deprived of a larger alternative credit because they were not permitted to use the so-called growth formula. The latter provided an alternative credit based on several combinations of the taxpayer's own earnings in the years 1948 through 1950 but was available only to corporations which were in operation throughout the base period.

The 1951 amendments include answers to both complaints. The growth formula is opened to corporations which commenced business during the base period (section 504). This action will be of considerable value to corporations which began operations early enough in the base period to develop a substantial earnings record before 1951. However, it will be of little value to most corporations which began business late in the base period, and of no significance to those which began after the base period had closed.

Additional relief is provided under section 501 which gives new corporations a reduced ceiling rate on the first $300,000 of their excess profits net income during each of the first five years of their operations. The reduced ceiling rates are as follows:

First year	5%
Second year	5
Third year	8
Fourth year	11
Fifth year	14

The income in excess of $300,000 is subject to the same 18 per cent ceiling rate applied to corporations generally, as is also the total excess profits tax net income of the new corporation in its sixth and subsequent years.

An attempt is made to restrict the reduced ceiling rate to those corporations which are really new. It is not available if the taxpayer is the result of a tax-free reorganization, if the taxpayer acquired a substantial portion of its assets from another corporation owned or controlled by the same stockholders, or in many cases where the taxpayer acquired an operating business.

A second restriction designed to exclude " war babies " from the benefits of this section, denies its use when 50 per cent or more of the corporation's gross income, exclusive of dividends and capital gains, is obtained from contracts subject to renegotiation.

The reduced ceiling rate for new corporations is in addition to, and not in lieu of, the relief provided under the new business formula contained in the original law. Indeed, the reduced ceiling is designed to cut down temporarily

the tax due in those cases where the industry average rate of return is not sufficiently large to be representative of the "normal" earning capacity of the new corporation.

The temporary nature of this remedy deserves emphasis. While the tax advantages of the first five years will permit a more rapid accumulation of assets than would otherwise have occurred, the action taken does not improve the formula used to compute the presumptive "normal" earnings of the corporation. As the years pass the amount of the tax will increase even though the corporation's earnings do not grow, and after a time the corporation will again be in the position where it constitutes a hardship case. Hence the device of a reduced ceiling rate must be regarded as a stopgap measure which will need to be supplemented by additional relief if the tax is continued for a substantial period.

B. Abnormalities

The bill contains an amendment of a comparatively specialized character to the section of the law dealing with base period "abnormalities." These are the cases in which normal production is interrupted by such events as strikes, fires, floods, and price wars. Under the original law a taxpayer using the abnormality provision eliminated the worst of its base period years and computed an alternative credit only if the "abnormalities" occurred in one or more of the remaining base period years. Section 509 of the 1951 bill makes the abnormality provision available when (1) the earnings of the taxpayer's third best base period year are less than 35 per cent of the average earnings in its two best years, and (2) the abnormality occurred in the year prior to the third best year. In effect, the bill presumes that in such cases the low income of the third best year was due to the abnormality occurring in the previous year. In qualified cases the taxpayer is permitted to substitute an alternative income computed by applying the industry average rate of return to the taxpayer's total assets for the actual income for the third best year, subject to the limitation that the alternative income for the third best year may not exceed the average for the two best years.

C. New Products

The original law contained a formula designed to provide relief when a taxpayer's base period earnings record is abnormal because of the introduction of a new product during the last three years of the base period. The bill (section 511) extends this provision to cases in which the taxpayer introduced the product after the base period had closed. In order to qualify under the amendment the taxpayer must have begun construction of the facilities needed to produce the new product before July 1, 1950, under a contract entered prior to the end of the base period which "granted a license, franchise, or similar right essential for the production of the new product." Although this is a very restricted type of commitment rule, it has the effect of establishing the principle that the base period income shall be adjusted for events which occurred after the close of the base period but which were based upon plans entered upon at an earlier date. The sort

of case to which section 511 applies was described at the hearings by a representative of the Ecusta Paper Corporation.[11]

D. Change in Capacity

The bill also contains an amendment of similar nature to the relief provision designed to cover cases where there was a material change in productive capacity during the last 36 months of the taxpayer's base period. Section 520 of the bill extends this provision to cases where the construction was completed after the close of the base period, but again, the scope of the additional relief is very narrowly confined. To qualify under the amendment the construction must have been completed during the corporation's first taxable year ending after June 30, 1950; 40 per cent of the construction must have been completed before the close of the base period; and its completion must have been "in pursuance of a plan to which the taxpayer was committed prior to the end of its base period." This also is a commitment rule of very limited scope. A case of the type to which it applies was presented to the committee by a representative of Pabco Products, Inc.[12]

E. Relief Formulas Designed to Cover New Types of Cases

In addition to the foregoing amendments designed to extend or improve the relief provided in situations which were recognized to be a problem in drafting the original law, the 1951 legislation includes four new relief formulas. All are of a very specialized character.

(1) *Consolidation of Newspapers.* One of these amendments (section 518) deals with a type of situation presented at the hearings by a representative[13] of the Fort Wayne Journal-Gazette and Sentinel. These are morning and evening papers respectively which consolidated their mechanical, circulation, advertising, and accounting departments on March 13, 1950, with a substantial saving in cost of operation. The resulting increase in income occurred after the close of the base period and hence was not reflected in the base period income of either newspaper.

The bill provides an alternative average base period net income for a taxpayer "engaged primarily in the newspaper publishing business in its last taxable year ending before July 1, 1950," which after the close of the first half of its base period and prior to July 1, 1950, "consolidated its mechanical, circulation, advertising and accounting operations in connection with its newspaper publishing business with such operations of another corporation engaged in the newspaper publishing business in the same area: . . ." To qualify under this provision the taxpayer must demonstrate that the consolidation resulted in substantial savings and must meet a test designed to reveal a substantial drop in costs or increase in income during the year following consolidation. Qualified taxpayers may add to their credit based on income, an amount equal to the difference between the average cost of the consolidated operations in the two taxable years preceding the one in which the consolidation occurred and the amount of such costs in the year following consolidation, after adjustment for

[11] *Revenue Revision of 1951*, Hearings of the Committee on Finance, pp. 1665-1681.

[12] *Ibid.*, pp. 2381-2383.

[13] *Ibid.*, pp. 1650-1652.

increases in labor costs and newsprint which occurred after consolidation.

(2) *Television Broadcasting Companies.* A second provision (section 519) applies to television broadcasters. A representative of this industry pointed out at the hearings [14] that during the base period years, television broadcasting was highly unprofitable, with the result that the credit based on income is usually very small. Radio broadcasters which added television suffered a material reduction in their average base period net income. The representative of the television industry asked for an alternative credit computed by applying the industry average rate of return for radio broadcasting in 1946 (before the television broadcasting losses appeared) to the taxpayer's total assets at the close of the base period.

The bill permits corporations which engaged in the television broadcasting business prior to January 1, 1951, and also engaged in some other business during the base period, to compute their credit based on income for the non-television business and add to it a hypothetical income for television broadcasting. The latter could be computed by multiplying the taxpayer's total assets attributable to its television broadcasting business at the close of its base period by the base period rate of return for the broadcasting industry generally or by the rate of return which the taxpayer itself earned as a radio broadcaster.

(3) *"Transition from War Production and Increase in Peacetime Capacity."* A third relief provision (section 516) which is also of a very specialized nature deals with a type of case presented at the hearings [15] by the president of the Owens-Corning Fiberglas Corporation. This company's base period earnings were unusually small because the company was going through a slow transition from wartime to peacetime production. During the war period more than 90 per cent of its production was for war purposes and a "great proportion" of this production had no civilian market. The slowness of the transition to peacetime commodities was attributed to the necessity for developing new markets and to the need for increasing the adjusted basis of the corporation's facilities from $9 million in 1946 to $23,500,000 in 1950. These changes did not begin to yield substantial profits until 1948.

The bill provides relief under the following conditions: (1) the taxpayer must have been a manufacturing corporation which commenced business before 1940; (2) the adjusted basis of the corporation's real property and tangible personal property at the beginning of the base period must not exceed $10 million; (3) the income attributable to contracts with the United States or related subcontracts must be not less than 70 per cent of the taxpayer's total income for the years 1942-1945 and must be less than 20 per cent of the total during the base period and 1950; and (4) the corporation's profits for 1945 and the average for 1948 and 1949 must be at least three times the average for 1946 and 1947.

Corporations which meet all these conditions may use an alternative average base period net income equal to 50 per cent of the corporation's income for 1948 and 40 per cent of the income for

[14] *Ibid.*, pp. 1772-1777.

[15] *Ibid.*, pp. 1591-1615.

1950. This particular alternative net income was introduced into the growth formula during the closing days of the period when the original law was being drafted in an effort to improve the credit based on income of certain companies which qualified under the "new product" test of growth and had an income in 1949 that was not more than 25 per cent of their income in 1948. It is difficult to see the logic inherent in the application of this formula to the type of case to which section 516 of the bill applies.

(4) *Base Period Catastrophe.* Finally, there is a new relief formula for corporations suffering a "catastrophe" during the last 36 months of the base period (section 517). Relief for cases of this type was requested at the hearings [16] by a representative of the Monsanto Chemical Company who was concerned with the effect of the destruction of the company's Texas City plant by an explosion on April 17, 1947, on the company's base period earnings record. The tests for eligibility under this provision are: (1) the destruction of or rendering inoperative a plant or facility having an adjusted basis prior to the catastrophe equal to 15 per cent or more of the adjusted basis of all the taxpayer's productive facilities at that time; (2) a resulting substantial interruption of the taxpayer's operation for a period of more than 12 months; and (3) the replacement of the plant or facility with one having at least as large an adjusted basis by the end of the base period. These tests were suggested by the Monsanto spokesman [17] who also proposed that the measure of relief be determined by means of the type of reconstructed base period net income used under section 722 of the World War II law. This would have been a violation of the principle of automatic relief used in the general relief provisions of the current law. Instead the bill permits qualified taxpayers to use an alternative credit in which an average of the income received prior to the year in which the catastrophe occurred is substituted for the actual earnings during the year of the catastrophe, or a credit equal to the sum of one half the taxpayer's income for 1948 and 40 per cent of its income for 1950. In this case also the use of the second of these two formulas for the purpose of developing an alternative income credit does not seem logical.

[16] *Ibid.*, pp. 1652-1665.

[17] *Ibid.*, p. 1657.

F. Technical Amendments to the General Relief Provisions

In addition to the two major changes in the treatment of new corporations, described above, section 512 of the bill corrects an error made in the drafting of the original law in connection with the treatment of borrowed capital under the new business formula. The amendment permits such capital to be counted at 100 per cent, as it is under the other relief provisions which authorize the computation of an alternative average base period net income by the application of an industry average rate of return to the taxpayer's total assets.

Another section of the bill (505) makes a technical change in the portion of the growth formula which permits certain taxpayers that qualify under the so-called new product test to use an alternative credit based on their income in 1948 and 1950. However, the taxpayer could be disqualified if it also met

the more general test of growth which runs in terms of gross receipts and payrolls. Under the bill this disqualification is eliminated.

A third amendment (section 510) requires a subsidiary corporation which uses an alternative credit calculated by applying an industry average rate of return to the corporation's total assets to exclude from the latter amounts borrowed on current account from a parent corporation so as to prevent double counting. This minor amendment is the only structural change in the excess profits tax law included in the bill which is designed to tighten up the law.

G. Appraisal of the Amendments to the General Relief Provisions

The appearance of a considerable number of amendments to the general relief provisions of the new excess profits tax law is not surprising since the original law was drafted in a very short period of time, embodied a new technique which based relief upon mechanical formulas rather than administrative discretion, and used a set of formulas which covered a smaller range of cases than had been eligible for relief under the World War II law.

While all of the 1951 amendments conform with the idea of providing relief by more or less automatic formulas and hence avoid the introduction of discretionary administrative relief, they are exposed to criticism on other grounds.

All but the purely technical amendments and those dealing with new corporations have a very restricted scope. This is true of the commitment rules attached to the sections of the original law dealing with changes in products and facilities and also of the new formulas set up in the 1951 bill. While the policy of confining the additional relief within very narrow limits reduces the immediate revenue loss, the consequence may be the appearance of a large number of additional pleas in behalf of corporations which have analogous problems but cannot meet the restrictive tests attached to the current legislation. The ability of the Congress to deny relief to such claimants is very doubtful in view of the fact that many of the specific actions taken in the 1951 bill imply the acceptance of principles having fairly general application. For instance, it is unlikely that having given its blessing to a commitment rule in connection with relief for certain changes in products and facilities, the Congress will be able to prevent the extension of the rule to cases which do not quite meet the tests contained in the existing law. Since Congress has provided an adjustment for the television broadcasters, it will be difficult to deny relief in other cases where the base period earnings are badly distorted by the presence of " loss lines." The newspaper consolidation amendment, while very restrictive in scope, implies an acceptance of the idea that relief should be provided when major changes occur in methods of management and organization, and the section labeled " Transition from World War II production and increase in peacetime capacity " recognizes as a basis for relief a problem which must have characterized the experience of a great many corporations during the base period years. The " catastrophe " rule has the most sweeping implications of all since it slices a particular abnormality case out of the scope of the abnormality section in order to provide an alternative credit based on entirely different formulas.

In each case the Congress will have to decide how far it is willing to go along the roads which have been opened by the actions taken in the 1951 legislation. If it does this by a process of dealing with specific cases on their individual merits the burden which will fall on the tax committees and their staff will be excessive. It would have been far wiser to delay the enactment of amendments to the general relief provisions until a limited number of formulas could be developed which would cover the bulk of the remaining true hardship cases.

The minority clerk of the Committee on Ways and Means has already pointed out that by its action on the general relief question the Committee on Finance was putting itself in the position of the Excess Profits Tax Council under the World War II law.[18] There is a great deal of truth in this allegation which is indeed a warning against a continuance of the policy that the 1951 amendments represent. It is worth recalling that in 1946, when the reform of section 722 was under consideration, statutory amendments were passed over in favor of administrative reorganization because it was recognized that statutory revision once begun would tend to develop into an interminable task, and it was felt that the legislative forum is not the best place to resolve the special problems of a single or small group of taxpayers. One of the major pitfalls which attended the adoption of the automatic formula technique used in the current law was the proliferation of the relief formulas which not only produces a serious legislative workload but increases the difficulty of maintaining an equitable relationship among the amounts of relief provided in different types of cases. If the automatic relief experiment is to be salvaged, it is essential that the provision of relief on a very limited basis be abandoned in favor of a small number of fairly broad formulas which conform with the general pattern set in the original legislation.

One additional observation seems appropriate. The device of building up an alternative credit by means of industry average rates of return does not appear to be standing up well in practice. The extension of the growth formula to new corporations and the reduced ceiling rates made available to such corporations both imply a recognition of the inadequacy of the amount of relief provided under the new corporation formula contained in the original law which used the industry average approach. Only one of the four new formulas introduced in the 1951 bill uses the industry average method of developing an alternative credit, and in this case (the television broadcaster's amendment) such an average will be used only when the taxpayer was not in the business of radio broadcasting during the base period or had a rate of return below the industry average. The implication of the so-called "catastrophe" provision is the most damaging of all since here a particular type of case was removed from the scope of the abnormality provision in order to provide an alternative credit more closely related to the taxpayer's own earnings experience. As was pointed out in connection with the original legislation, the combination of a general rule providing relief on the basis of an industry

[18] Gordon Grand, "The Revenue Act of 1951—Observations on Our Federal Legislative Process," presented to the 44th Annual Conference of the National Tax Association, Dallas, Nov. 27, 1951.

average rate of return and a series of exceptions which grant a higher credit when the taxpayer's earnings are in excess of the industry average is bound to have a serious effect upon the yield of the tax.

IV. Other Structural Amendments

The remaining twelve amendments to the excess profits tax law are far more difficult to discuss since they are very specialized and relate to a wide variety of problems. All are relief measures.

The group includes two amendments which benefit the mineral industries. Bauxite is added to the strategic minerals the income attributable to which is excluded from the tax (section 522). The exemption of "excess output" is extended to sulfur, potash and metallurgical and chemical grades of limestone (section 515).

There are two amendments to the special credit for regulated public utilities. One extends this credit to intrastate pipelines (section 513); the other to certain lessor railroad corporations that file a consolidated return with a lessee eligible for the credit (section 514).

Four amendments deal with the distinction between admissible and inadmissible assets, which is used in connection with the credit based on invested capital and the adjustment of the credit based on income for changes in capital. Two of these (section 506) apportion the changes in the inadmissible assets held by banks (mainly tax exempt securities) between the stockholders and the depositors for purposes of computing base period capital additions [19] and for capital additions in the tax period respectively. The third, which applies to corporations other than banks using the credit based on income, permits a reduction in inadmissible assets, to the extent that it is not offset by a net capital reduction, to be counted as a capital addition, providing the funds obtained by the sale of the inadmissible assets are reinvested in operating assets (section 507). The fourth of this group of amendments permits dealers in tax exempt securities to treat such securities as admissible assets provided the interest received on them is included in excess profits tax net income (section 508).

There are two provisions which are of particular interest to corporations with foreign affiliates. Fees paid to a domestic corporation by a related foreign corporation for "technical assistance, engineering services, scientific assistance or similar services" which are "related to the production or improvement of products of the type manufactured" by the domestic corporation are excluded from the latter's income for excess profits tax purposes (section 502). Corporations exempt from the excess profits tax (such as a foreign corporation) are permitted to withdraw a previous election to file a consolidated return with taxable corporations (section 613).

The list also contains an amendment to the extremely technical provision which governs the use of the earnings experience of a predecessor corporation in the computation of a taxpayer's average base period net income (section 521). The current amendment extends this privilege to certain cases in which the successor corporation is merely a

[19] This amendment is the one exception to the general rule of giving all the structural changes retroactive effect to the date of enactment of the original law. This particular amendment is optional for taxable years beginning before the date of enactment of this bill and mandatory thereafter.

continuation of all or a portion of the business of its predecessor but was not set up in a tax-free reorganization.

Of more general interest and of greater significance from the standpoint of the revenue loss involved is the final item on the list, an amendment to the definition of the base period for fiscal year corporations (section 503). The original law departed from the general rule of using the 48 months between January 1, 1946, and December 31, 1949, to the extent of authorizing taxpayers whose fiscal years ended after December 31 but before April 1 to use as their base period the last 48 months ending with their last taxable year ending prior to April 1, 1950. This was not a particularly logical exception but it was excused principally on the grounds that corporate profits, taking the country as a whole, were not unusually high during the first quarter of 1950. However, the profits of some corporations were, of course, on the upgrade during these months and their inclusion in the base period was a distinct advantage. On the other hand, when the fiscal year ended on or after April 1 the base period was defined as the 48 months beginning January 1, 1946. The determination of the income of each of the months between January 1, 1946, and the beginning of the taxpayer's next fiscal year was accomplished by taking one-twelfth of the income of the fiscal year beginning in 1945 and ending in 1946. This fact was the basis for the complaint that corporations with fiscal years ending on or after April 1 found their average base period net income depressed by their 1945 earnings record. The corollary of this proposition was less frequently recognized. The income of each of the months which intervened between the close of the 1949 fiscal year and January 1, 1950, was computed by taking one-twelfth of the income of the fiscal year ending in the calendar year 1950. Thus, the average base period net income of these same taxpayers may have been raised by profits earned during the calendar year 1950.

The response of the Congress to the complaint received from taxpayers with fiscal years ending on or after April 1 was to give them an additional option, to permit them to compute their average base period net income from the income of the 48 months ending on March 31, 1950. As a result the only taxpayers which cannot use the first three months of 1950 are those on the calendar year. It remains to be seen whether they can be excluded from this privilege permanently. In any event, the 1951 amendment to the definition of the base period of fiscal year taxpayers is merely a corollary of an action taken in the original bill. The experience on this point is an illustration of the danger involved in narrowly defined departures from the general rules of the tax law. These departures have the habit of spreading far beyond their original limits, a fact which is not without significance in an appraisal of the bulk of the excess profits tax amendments contained in the Revenue Act of 1951.

SOME RESULTS FROM THE FIRST YEAR'S AUDIT CONTROL PROGRAM OF THE BUREAU OF INTERNAL REVENUE

MARIUS FARIOLETTI *

SINCE THE FIRST detailed account of the Bureau's Audit Control Program was published in this *Journal* in June, 1949,[1] a considerable amount of activity has occurred in this field. In addition to the project for 1948 individual income tax returns, some of the results of which are being summarized in this article, programs for 1949 and 1950 returns have been launched. The 1949 project is just now beginning to produce the estimates planned. It covers not only individual income tax returns, but also (1) the income tax returns of small corporations, (2) the three federal payroll tax returns,[2] and (3) five excise taxes.[3] The payroll and excise tax returns selected are those of business taxpayers whose 1949 individual and corporate income tax returns have been sampled for examination under the Audit Control Program.[4] The project for 1950 returns has been drastically reduced in scope and size in the attempt to fit the program to the relatively small statistical and analytical facilities available to compile and analyze the results of the sample audits. The 1950 project covers only individual income tax returns and will produce substantially less detail than the 1948 project.[5] The samples of 1950 returns will all have been selected by the time this article is published, and many of the selected returns will have been audited.

The primary objective of the first year's Audit Control Program was to determine the size of the individual income tax enforcement problem confronting the Bureau of Internal Revenue. This determination provides an improved basis for broad policy decisions involving over-all budgetary needs. In this connection some very early estimates were presented at the Treasury Department—Post Office Appropriations Hearings for 1951 before the Subcommittee of the Committee on Appropriations of the House of Representatives.[6]

The following estimates are based on the results of the investigations of about 160,000 individual income tax returns selected to represent the 52 million returns filed for the income year 1948. These estimates represent the tax errors

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[1] M. Farioletti, "The 1948 Audit Control Program for Federal Individual Income Tax Returns," *National Tax Journal*, II (June, 1949), pp. 142-150.

[2] The withholding, FICA, and FUTA taxes.

[3] Admissions and the four retail excises on furs, luggage, jewelry, and toilet preparations.

[4] For more details on the 1949 program, see "The Audit Control Program of the Bureau of Internal Revenue," New York University Ninth Annual Institute of Federal Taxation, New York City: 1951, pp. 598-599; also "Sampling Techniques in Auditing: The Audit Control Program of the Bureau of Internal Revenue," to be presented in the 1951 National Tax Association Proceedings of the Forty-Fourth National Conference.

[5] For more detail, see "Sampling Techniques in Auditing . . . ," *op. cit.*

[6] 81st Cong., 2d sess., Part I, pp. 201-206.

of $2 or more per return that probably would be found if all the returns filed were thoroughly examined by experienced examining officers.

Perhaps the most striking result of the 1948 sample audits is the estimate that one out of every four returns is in error.[7] Considering that 52 million 1948 individual income tax returns were filed, the total number of faulty returns reaches the amazing size of 13.7 million.[8]

Nine out of ten taxpayers filing erroneous returns voluntarily paid less tax than the correct amount determined by Bureau examining officers.[8] The tenth taxpayer made the mistake of paying more than the correct amount of tax under the law.

The 52 million individuals who filed returns voluntarily reported about $15 billion of 1948 individual income tax liability, while mistakes on erroneous returns aggregated about $1.5 billion of tax change, or 10 per cent of the total tax liability voluntarily reported. Stated another way, the 13.7 million erroneous returns voluntarily reported $7.4 billion of tax liability; thus, the $1.5 billion of tax change is one-fifth of the tax voluntarily declared on these erroneous returns. About $1.4 billion, or more than nine-tenths of the total tax change, is estimated to involve additional assessments, and somewhat less than $100 million involves overassessments.[9]

[7] For a graphic summary of estimates for 1948 individual income tax returns, see "The Audit Control Program," U. S. Treasury Department, Bureau of Internal Revenue pamphlet issued May, 1951.

[8] See Table 1 for the detail of these estimates.

[9] See Tables 2 and 3 for the detail of these estimates.

The 13.7 million erroneous returns amount to about four times the volume of individual income tax returns that can annually be examined with the staff and methods available to the Bureau during the 1951 fiscal year. Usually six out of every ten of the more than four million individual returns which are annually examined under the regular examination programs are found to be wrong. If the 1951 staffs and procedures are maintained, the estimates indicate that about 11 million of the 13.7 million erroneous returns probably would not be adjusted.

While the estimated total number of erroneous returns is, at first glance, surprisingly large, we must remember that we are dealing here with truly large numbers and that three out of every four returns appear to be correct as filed. Thus, when it is considered that about three-fourths of the taxpayers apparently are already complying fully with the requirements of the individual income tax, some optimism may be expressed toward finding improved methods of coping with the problems of the one-fourth that are making tax errors. Many of the errors disclosed by the sample audits are small, suggesting the source to be either carelessness or insufficient knowledge on the part of the taxpayer. Helping these taxpayers to determine their correct tax liabilities by their own efforts should be feasible although it is not a problem that can be successfully solved in a year or two. As some taxpayers learn to avoid making mistakes, there will be others who will make mistakes for the first time. However, this may be an area of tax enforcement where only one backward step needs be taken for every two forward strides.

The Audit Control Program results indicate the fundamental willingness of the great majority of taxpayers voluntarily to comply with the law. They suggest the importance of continually emphasizing and striving for simple tax return forms, instructions, and other educational materials that are helpful in reducing the postfiling audit and investigation workload.

The Bureau divides its individual income tax enforcement work into two parts: (1) the great mass of lower income returns is under the audit jurisdiction of the 64 Collectors of Internal Revenue; and (2) the much smaller number of higher income returns is under the audit jurisdiction of the 39 Internal Revenue Agents in Charge of the field offices of the Income Tax

TABLE 1

PRELIMINARY ESTIMATES OF NUMBER OF 1948 INDIVIDUAL INCOME TAX RETURNS FILED AND NUMBER OF RETURNS WITH ERROR, CLASSIFIED BY TAX CHANGE, BY TYPE OF RETURN, AND BY SIZE OF INCOME

Type of Return and Size of Income *	All Returns Filed	Returns with Tax Errors of $2 or More			
		Total		Per cent of Total Number with Tax	
		Number	Per cent of All Returns Filed	Increase	Decrease
Number of Returns (in thousands)					
1. Grand total	52,139	13,725	26.3%	91.2%	8.8%
2. Total collectors' returns	49,234	11,885	24.1	91.6	8.4
(a) Forms 1040A	19,325	2,196	11.4	92.6	7.4
(b) Forms 1040	29,909	9,689	32.4	91.4	8.6
3 Total agents' returns	2,905	1,840	63.3	88.7	11.3
(a) Under $25,000	2,649	1,660	62.7	89.0	11.0
(b) $25,000 to $100,000	240	168	69.9	86.7	13.3
(c) $100,000 and over	16	12	72.4	84.6	15.4
Percentage Distribution of Number of Returns					
4. Grand total	100.0%	100.0%	...	100.0%	100.0%
5. Total collectors' returns	94.4	86.6	...	87.0	82.8
(a) Forms 1040A	37.1	16.0	...	16.2	13.4
(b) Forms 1040	57.4	70.6	...	70.7	69.4
6. Total agents' returns	5.6	13.4	...	13.0	17.2
(a) Under $25,000	5.1	12.1	...	11.8	15.2
(b) $25,000 to $100,000	0.5	1.2	...	1.2	1.8
(c) $100,000 and over	†	0.1	...	0.1	0.2

* Form 1040A may be used if adjusted gross income is less than $5,000, not more than $100 of which is from wages not subject to withholding and from dividends and interest. Collectors' 1948 Form 1040 returns are those with less than $7,000 of adjusted gross income and with gross receipts of less than $25,000 from business or profession. Agents' returns are 1948 Forms 1040 with $7,000 or more of adjusted gross income or with gross receipts of $25,000 or more from business or profession.

† Less than 0.05 per cent.

Source: Bureau of Internal Revenue, Audit Control Program for 1948 individual income tax returns.

Division.[10]

The Audit Control Program results show the importance of size of income as an index of tax error. The 2.9 million higher income returns under the audit jurisdiction of internal revenue agents account for only 6 per cent of the returns filed. However, they account for 13 per cent of the erroneous returns and 42 per cent of the tax change. In contrast, the 49 million lower income returns, under the audit jurisdiction of collectors, account for 94 per cent of the returns filed, 87 per cent of the erroneous returns and 58 per cent of the tax change.[11] It is clear that both lower and higher income groups must have adequate enforcement coverage. The enforcement

[10] For the income years 1948 and 1949, the dividing line for audit jurisdiction was $7,000 of adjusted gross income and/or $25,000 of gross receipts from business or profession. For income years beginning with 1950, the line has been raised to $8,000 of adjusted gross income and/or $50,000 of gross receipts.

[11] The details of these estimates are presented in Tables 1 and 3.

TABLE 2

PRELIMINARY ESTIMATES OF TAX CHANGE DISCLOSABLE BY AUDIT, AS A PROPORTION OF TAX VOLUNTARILY REPORTED ON 1948 INDIVIDUAL INCOME TAX RETURNS, CLASSIFIED BY TYPE OF RETURN, AND BY SIZE OF INCOME

Type of Return and Size of Income *	Tax Liability Voluntarily Reported (Millions of dollars)	Tax Change Disclosable by Audit		
		Amount (Millions of dollars)	Per cent to Tax Voluntarily Reported	Average Amount per Return
	All Returns			
1. Grand total	15,436	1,518	9.8%	$ 29
2. Total collectors' returns	7,897	885	11.2	18
(a) Forms 1040A	2,439	138	5.7	7
(b) Forms 1040	5,458	747	13.7	25
3. Total agents' returns	7,539	633	8.4	218
(a) Under $25,000	3,299	432	13.1	163
(b) $25,000 to $100,000	2,800	158	5.6	659
(c) $100,000 and over	1,439	43	3.0	2,632
	Returns with Tax Change			
4. Grand total	7,414	1,518	20.5%	$ 111
5. Total collectors' returns	2,304	885	38.4	74
(a) Forms 1040A	274	138	50.4	63
(b) Forms 1040	2,030	747	36.8	77
6. Total agents' returns	5,110	633	12.4	344
(a) Under $25,000	2,104	432	20.5	260
(b) $25,000 to $100,000	1,954	158	8.1	942
(c) $100,000 and over	1,053	43	4.1	3,633

* Form 1040A may be used if adjusted gross income is less than $5,000, not more than $100 of which is from wages not subject to withholding and from dividends and interest. Collectors' 1948 Form 1040 returns are those with less than $7,000 of adjusted gross income and with gross receipts of less than $25,000 from business or profession. Agents' 1948 returns are Forms 1040 with $7,000 or more of adjusted gross income or with gross receipts of $25,000 or more from business or profession.

Source: Bureau of Internal Revenue, Audit Control Program for 1948 individual income tax returns.

methods applied to the two groups must differ, however.

Tax errors are 2.5 times more frequent on the more complex higher income agents' returns than on collectors' returns. Table 1 shows the error frequencies to be 11 per cent and 32 per cent on the two types of collectors' returns, and to range from 63 per cent to 72 per cent on the three classes of agents' returns. Because errors are less frequent on lower income returns they are harder to find, and improving the methods of selecting incorrect returns for examination is important in raising the efficiency of tax enforcement by audit methods. Erroneous agents' returns are more frequent; hence the problem of selecting them for investigation is less difficult. In this area, efficiency of tax enforcement is more likely to be raised by methods designed to pick agents' returns with relatively large tax errors.

The average size of tax error increases sharply as size of income reported on the tax return increases. Table 2 shows the averages to range from $7 per 1948 Form 1040A return filed to $2,632 per Form 1040 return listing $100,000 or more of income. The average tax change for all returns estimated to contain tax errors is about $111 per return. However, the average amount increases

TABLE 3

PRELIMINARY ESTIMATES OF TAX CHANGE DISCLOSABLE BY AUDIT OF 1948 INDIVIDUAL INCOME TAX RETURNS, CLASSIFIED BY TYPE OF RETURN, AND BY SIZE OF INCOME

Type of Return and Size of Income *	Total Tax Change	Per cent of Total Change	
		Increase	Decrease
Amount of Tax Change (Millions of dollars)			
1. Grand total	1,518	94.3%	5.7%
2. Total collectors' returns	885	95.4	4.6
(a) Forms 1040A	138	94.3	5.7
(b) Forms 1040	747	95.6	4.4
3. Total agents' returns	633	92.9	7.1
(a) Under $25,000	432	94.2	5.8
(b) $25,000 to $100,000	158	90.4	9.6
(c) $100,000 and over	43	88.7	11.3
Percentage Distribution of Amount of Tax Change			
4. Grand total	100.0%	100.0%	100.0%
5. Total collectors' returns	58.3	58.9	47.6
(a) Forms 1040A	9.1	9.1	9.1
(b) Forms 1040	49.2	49.9	38.5
6. Total agents' returns	41.7	41.1	52.4
(a) Under $25,000	28.4	28.4	29.2
(b) $25,000 to $100,000	10.4	10.0	17.6
(c) $100,000 and over	2.8	2.7	5.6

* Form 1040A may be used if adjusted gross income is less than $5,000, not more than $100 of which is from wages not subject to withholding and from dividends and interest. Collectors' 1948 Form 1040 returns are those with less than $7,000 of adjusted gross income and with gross receipts of less than $25,000 from business or profession. Agents' 1948 returns are Forms 1040 with $7,000 or more of adjusted gross income or with gross receipts of $25,000 or more from business or profession.

Source: Bureau of Internal Revenue, Audit Control Program for 1948 individual income tax returns.

from a low of $63 per erroneous Form 1040A to a high of $3,633 for returns listing incomes of $100,000 and over.

The proportion that the total tax change bears to the total tax reported on all returns filed varies from a high of 13 to 14 per cent for the two groups of Form 1040 returns with adjusted gross incomes of less than $25,000, to a low of 3 per cent for returns listing incomes of $100,000 or more. When tax change is considered only with respect to erroneous returns, the importance of tax adjustments relative to tax voluntarily reported decreases as the size of the taxpayer's income increases. Thus, for the 2.2 million erroneous Form 1040A returns, the tax change is estimated to be about 50 per cent of the voluntarily reported tax liabilities. For the 16,000 returns with adjusted gross incomes of $100,000 or over, the tax change is about 4 per cent of the reported tax liabilities.

The amount of tax change disclosable per examining officer also increases sharply as size of income increases. Table 4, column 1 shows the average

TABLE 4

PRELIMINARY ESTIMATES OF TAX CHANGE PER MAN-YEAR OF EXAMINATION EFFORT, APPLIED UNDER 1948 AUDIT CONTROL PROGRAM CONDITIONS

Type of Return and Size of Income *	Yield per Man-Year, Assuming Selection of 1948 Returns at Random †	Potential Yield per Man-Year Assuming Selection of Only Erroneous 1948 Returns ‡	Yield per Man-Year, Assuming Selection of 1948 Returns at Random, Plus Follow-up of Leads on Related and Other Year Returns §
Forms 1040A	$ 9,412	$ 54,937	$ 12,815
Collectors' Forms 1040	18,294	37,525	27,914
Agents' returns, under $25,000 income	27,606	36,121	44,660
Agents' returns, $25,000 to $100,000 income	73,001	90,407	160,668
Agents' returns, income $100,000 and over	196,880	237,233	413,012

* Form 1040A may be used if adjusted gross income is less than $5,000, not more than $100 of which is from wages not subject to withholding and from dividends and interest. Collectors' 1948 Form 1040 returns are those with less than $7,000 of adjusted gross income and with gross receipts of less than $25,000 from business or profession. Agents' returns are 1948 Forms 1040 with $7,000 or more of adjusted gross income or with gross receipts of $25,000 or more from business or profession.

† These estimates are for the tax year 1948 only and show the tax change per man-year that would be obtained by investigation either of returns selected at random or of all returns filed. The average tax change per man-year realized in practice is larger because it includes tax change resulting from examination of related cases and the existing selection procedures operate with above-random effectiveness.

‡ These estimates indicate the potential increase in efficiency per examiner (compared with the random selection method) by eliminating the examination of returns resulting in no tax change. They also relate to only 1948 returns, and do not indicate efficiency increases obtainable by eliminating returns with only small tax change.

§ These estimates indicate the magnitude of the increase in yield per man-year of examination effort (compared with the random selection method) that is involved in following leads developed during the examination of returns selected at random. The leads involve both the returns of other years for the taxpayer whose 1948 return was randomly selected and those of related taxpayers, such as spouses and partners.

Source: Bureau of Internal Revenue, Audit Control Program for 1948 individual income tax returns.

tax change per man-year to range from about $9,400 for Form 1040A returns selected at random to about $197,000 for the highest-income returns. An appreciable portion of the difference between these average amounts of tax change per man-year is attributable, of course, to the significant differences in the marginal effective tax rates applicable to the disclosed changes in basis of tax.

The differences between the average tax adjustments per man-year shown in columns 1 and 2 of Table 4, indicate the potential increases in productivity per man-year that would tend to result (compared with selection of returns at random) from an increase in the capacity to select for examination only returns with a tax change, irrespective of the size of tax change. The estimates indicate that productivity per man-year in the collectors' area would tend to be doubled on Form 1040 returns and increased more than five-fold on Form 1040A returns by selecting for examination only returns with tax change. In the agents' area, however, the potential increase in productivity that would result from eliminating no change cases is much more limited. These estimates also suggest that efforts to improve the selection system, based on picking only change cases, irrespective of size of change, are relatively more important among the collectors' returns than among the agents' returns. This importance tends to increase as the size of income decreases. In the agents' area, the estimates presented in column 3 of Table 4 indicate that the following of leads disclosed upon examination of returns selected at random may be more important in raising the yields obtained per man-year of examination effort than the elimination of examinations resulting in no tax change.

In the collectors' area, a variety of factors suggest that low cost, mass enforcement techniques must be used to improve the level of tax enforcement: namely, the huge number of returns involved, the low frequency of tax error disclosed, the small average amount of tax change per return filed, and the relatively low productivity obtainable per man-year of examination effort under thorough auditing procedures. Simple tax return forms and instructions and well planned educational campaigns designed to help taxpayers correctly determine their own tax liabilities are of particular importance in this mass enforcement area. Continual search should be made for improved collection and verification procedures that will make it more difficult for taxpayers to make mistakes and easier for the tax administrator to detect them. Selecting returns by patterns-of-error characteristics will tend to reduce handling costs involved in selecting returns for examination. Maximizing the use of correspondence audits will tend to reduce the cost of adjusting tax errors.

In the agents' area the smaller number of returns, the high frequency of error, the relatively large average amounts of tax error, the complex tax issues, and the high productivity per man-year of examination effort indicate that relatively frequent and thorough audits are necessary. In this area the enforcement problem is more manageable in terms of the classical selection and audit procedures that use relatively large inputs of skilled manpower. Thus, all returns reporting incomes of $25,000 or more must be examined on

a two-year cycle basis—each audit covering the taxpayer's returns for the two income years since the last examination—under the present audit program. This policy of 100 per cent coverage is feasible because only about 250,000 of these returns are filed each year and because the audits will produce a relatively large amount of tax change per man-year of examination time.

The Audit Control Program is also providing more specific knowledge about the various kinds of tax errors. This information helps to indicate the tax enforcement problems that may be attacked by educational procedures and legislation, in addition to indicating improved selection methods. Tables 5 and 6 present information classifying the 14 million returns with tax error by four major types of error, namely: (1) adjusted gross income, (2) personal deductions, (3) exemptions, and (4) mathematical errors, either (a) major mathematical error or (b) where the sole error is mathematical.

Table 5 presents estimates which indicate that 7.5 million, or 55 per cent, of the 13.7 million returns with tax errors would show the major error to be in adjusted gross income. About 3.2 million, or 23 per cent, of the returns would show the major source of error to be either in itemized personal deductions or in the selection of the wrong standard deduction (including some cases involving incorrect use of the Supplement T tax table). Close to 2.2 million, or 16 per cent, of the returns with error would show the major source of error to involve incorrect claims regarding personal exemptions.

Table 6 indicates that over $1 billion, or about 70 per cent, of the aggregate tax adjustment of $1.5 billion is attributable to returns showing the major error to be in adjusted gross income. Less than $250 million, or 16 per cent, of the total tax adjustment is estimated to be on returns showing the major error to be in the exemption area, and only about $175 million of the total estimated tax error, or less than 12 per cent, is attributable to personal deductions.

Relatively few major errors stem from faulty arithmetic and the aggregate tax change involved is less than $50 million.

Exemption errors are almost exclusively a small taxpayer problem; collectors' returns account for about 98 per cent of this major source of tax error. A significant mass enforcement problem is involved in the 2 million returns of small taxpayers estimated to contain errors in personal exemptions. Table 7 shows that small taxpayers listing one or more exemptions outside the immediate family (that is, exemptions of relatives other than children) made exemption errors more than ten times as frequently as the others. Thus, only a little more than 2 per cent of the 43 million 1948 collectors' returns listing only exemptions within the immediate family show exemption errors. However, one out of every four of the 2.6 million Form 1040A returns and one out of five of the 3.6 million collectors' Form 1040 returns listing exemptions outside the immediate family show exemption errors. Consequently, collectors' returns that list exemptions of such dependent relatives will be more

TABLE 5

PRELIMINARY ESTIMATES OF NUMBER OF 1948 INDIVIDUAL INCOME TAX RETURNS WITH TAX ERRORS, CLASSIFIED BY MAJOR

TABLE 5

PRELIMINARY ESTIMATES OF NUMBER OF 1948 INDIVIDUAL INCOME TAX RETURNS WITH TAX ERRORS, CLASSIFIED BY MAJOR SOURCE OF ERROR, BY TYPE OF RETURN, AND BY SIZE OF INCOME*

Major Source of Error †	All Returns with Tax Error	Collectors' Returns			Revenue Agents' Returns			
		Total	Form 1040A	Form 1040	Total	Under $25,000	$25,000 to $100,000	$100,000 and over
				Number of Returns (in thousands)				
1. All sources	13,725	11,885	2,196	9,688	1,840	1,660	168	12
(a) Adjusted gross income	7,534	6,149	1,048	5,101	1,385	1,260	117	8
(b) Personal deductions ‡	3,212	2,886	....	2,886	326	280	43	3
(c) Exemptions	2,187	2,141	1,019	1,122	46	43	3	§
(d) Mathematical errors	772	690	127	564	82	77	5	§
(1) Solely mathematical	484	442	33 ¶	410	42	40	2	§
(2) With other errors	288	248	94	154	40	37	3	§
(e) Major source not stated	19 ¶	18 ¶	3 ¶	15 ¶	1 ¶	1 ¶	§	§
				Percentage Distribution by Type of Return and Size of Income				
2. All sources	100.0%	86.6%	16.0%	70.6%	13.4%	12.1%	1.2%	0.1%
(a) Adjusted gross income	100.0	81.6	13.9	67.7	18.4	16.7	1.6	0.1
(b) Personal deductions ‡	100.0	89.9	....	89.9	10.1	8.7	1.3	0.1
(c) Exemptions	100.0	97.9	46.6	51.3	2.1	2.0	0.1	‖
(d) Mathematical errors	100.0	89.3	16.4	73.0	10.7	10.0	0.6	0.1
(1) Solely mathematical	100.0	91.3	6.7 ¶	84.6	8.7	8.2	0.5	‖
(2) With other errors	100.0	86.1	32.6	53.5	13.9	12.9	0.9	0.1 ¶
(e) Major source not stated	100.0 ¶	93.6 ¶	15.7 ¶	77.9 ¶	6.4 ¶	4.5 ¶	1.8 ¶	0.1 ¶
				Percentage Distribution by Major Source of Error				
3. All sources	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
(a) Adjusted gross income	54.9	51.7	47.7	52.7	75.3	75.9	69.9	67.5
(b) Personal deductions ‡	23.4	24.3	....	29.8	17.7	16.9	25.4	27.4
(c) Exemptions	15.9	18.0	46.4	11.6	2.5	2.6	1.5	1.1 ¶
(d) Mathematical errors	5.6	5.8	5.8	5.8	4.5	4.6	2.9	3.8
(1) Solely mathematical	3.5	3.7	1.5 ¶	4.2	2.3	2.4	1.4	1.5 ¶
(2) With other errors	2.1	2.1	4.3	1.6	2.2	2.2	1.6	2.3 ¶
(e) Major source not stated	0.1 ¶	0.2 ¶	0.1 ¶	0.2 ¶	0.1 ¶	0.1 ¶	0.2 ¶	0.2 ¶

* Form 1040A may be used if adjusted gross income is less than $5,000 not more than $100 of which is from wages not subject to withholding and from dividends and interest. Collectors' 1948 Form 1040 returns are those with less than $7,000 of adjusted gross income and with gross receipts of less than $25,000 from business or profession. Agents' 1948 returns are Forms 1040 with $7,000 or more of adjusted gross income or with gross receipts of $25,000 or more from business or profession.

† Major error means that the largest portion of tax change is attributable to one of the four types of error listed.

‡ Personal deduction errors include some instances of incorrect use of tax table.

§ Less than 500 returns.

‖ Less than 0.05 per cent.

¶ Because of the small number of sample returns in this group, the entry is subject to relatively large sampling variation and should be used with caution.

Source: Bureau of Internal Revenue, Audit Control Program for 1948 individual income tax returns.

TABLE 6

PRELIMINARY ESTIMATES OF TAX CHANGE DISCLOSABLE BY AUDIT OF 1948 INDIVIDUAL INCOME TAX RETURNS CLASSIFIED BY MAJOR SOURCE OF ERROR, BY TYPE OF RETURN, AND BY SIZE OF INCOME *

Major Source of Error †	Total Tax Change	Collectors' Returns			Revenue Agents' Returns			
		Total	Form 1040A	Form 1040	Total	Under $25,000	$25,000 to $100,000	$100,000 and over
		Amount of Tax Change (Millions of dollars)						
1. All sources	1,518	885	138	747	633	432	158	43
(a) Adjusted gross income	1,060	506	31	475	554	383	137	34
(b) Personal deductions ‡	173	117	....	117	56	31	18	7
(c) Exemptions	239	231	104	127	8	7	1	§
(d) Mathematical errors	43	30	3	26	14	11	2	2
(1) Solely mathematical	19	14	1 ¶	13	4	4	1	§
(2) With other errors	24	15	2	13	9	7	1	1 ¶
(e) Major source not stated	3 ¶	2 ¶	§	2 ¶	1 ¶	§	§	§
		Percentage Distribution by Type of Return and Size of Income						
2. All sources	100.0%	58.3%	9.1%	49.2%	41.7%	28.4%	10.4%	2.8%
(a) Adjusted gross income	100.0	47.7	2.9	44.8	52.3	36.1	12.9	3.2
(b) Personal deductions ‡	100.0	67.6	....	67.6	32.4	18.0	10.4	4.0
(c) Exemptions	100.0	96.5	43.4	53.1	3.5	3.1	0.4	‖
(d) Mathematical errors	100.0	68.0	7.4	60.7	32.0	24.0	4.4	3.6
(1) Solely mathematical	100.0	76.4	5.7 ¶	70.7	23.6	19.3	3.1	1.2 ¶
(2) With other errors	100.0	61.6	8.6	52.9	38.4	27.6	5.4	5.4 ¶
(e) Major source not stated	100.0 ¶	73.9	11.3 ¶	62.6 ¶	26.1	11.5 ¶	12.9 ¶	1.7 ¶
		Percentage Distribution by Major Source of Error						
3. All sources	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
(a) Adjusted gross income	69.8	57.2	22.3	63.6	87.5	88.6	86.6	79.8
(b) Personal deductions ‡	11.4	13.2	....	15.6	8.8	7.2	11.4	16.2
(c) Exemptions	15.7	26.0	75.1	17.0	1.3	1.7	0.6	0.2 ¶
(d) Mathematical errors	2.9	3.3	2.3	3.5	2.2	2.4	1.2	3.6
(1) Solely mathematical	1.2	1.6	0.8 ¶	1.8	0.7	0.8	0.4	0.5 ¶
(2) With other errors	1.6	1.7	1.5	1.7	1.5	1.6	0.8	3.1 ¶
(e) Major source not stated	0.2 ¶	0.3 ¶	0.3 ¶	0.3 ¶	0.1 ¶	0.1 ¶	0.3 ¶	0.1 ¶

* Form 1040A may be used if adjusted gross income is less than $5,000, not more than $100 of which is from wages not subject to withholding and from dividends and interest. Collectors' 1948 Form 1040 returns are those with less than $7,000 of adjusted gross income and with gross receipts of less than $25,000 from business or profession. Agents' 1948 returns are Forms 1040 with $7,000 or more of adjusted gross income or with gross receipts of $25,000 or more from business or profession.

† Major error means that the largest portion of tax change is attributable to one of the four types of error listed.

‡ Personal deduction errors include some instances of incorrect use of tax table.

§ Less than $500,000.

‖ Less than 0.05 per cent.

¶ Because of the small number of sample returns in this group, the entry is subject to relatively large sampling variation and should be used with caution.

Source: Bureau of Internal Revenue, Audit Control Program for 1948 individual income tax returns.

closely scrutinized, and the Bureau's facilities for handling exemption errors will be concentrated among this type of return. As a means of reducing the audit workload in this area, additional effort is also being made to improve taxpayer knowledge of the legal requirements which must be met to claim the exemptions of dependent relatives. It is for this reason that the 1951 Forms 1040A and 1040 contain new exemption schedules segregating the listing of the exemption of children from those of other close relatives. The instructions also emphasize the difference in the legal requirements for claiming exemption for children and close relatives.

In terms of frequency of occurrence, major error in personal deductions is next in importance to major error in adjusted gross income. The 3.2 million returns with major error in personal deductions are estimated to contain about $175 million of tax change. The

TABLE 7

PRELIMINARY UNITED STATES ESTIMATES OF COLLECTORS' 1948 ERRONEOUS INDIVIDUAL INCOME TAX RETURNS (A) SEGREGATED BETWEEN EXEMPTIONS AND OTHER ERRORS, AND (B) COMPARING THOSE LISTING ONLY EXEMPTIONS WITHIN IMMEDIATE FAMILY WITH THOSE LISTING EXEMPTIONS OUTSIDE IMMEDIATE FAMILY

Type of Return* and Source of Error	Returns Listing Only Exemptions within Immediate Family †		Returns Listing One or More Exemptions outside Immediate Family ‡	
	Number (in thousands)	Per cent of All Such Returns Filed	Number (in thousands)	Per cent of All Such Returns Filed
1. Form 1040A returns:				
(a) Number filed	16,744	100.0%	2,582	100.0%
(b) Number with tax change	1,469	8.8	728	28.2
(1) Major error in exemption	370	2.2	648	25.1
(2) Minor error in exemption	28	0.2	8 §	0.3 §
(3) Errors, but not in exemptions	1,071	6.4	71	2.7
2. Collectors' Form 1040 returns:				
(a) Number filed	26,340	100.0%	3,566	100.0%
(b) Number with tax change	8,148	30.9	1,538	43.1
(1) Major error in exemption	452	1.7	669	18.7
(2) Minor error in exemption	93	0.4	54	1.5
(3) Errors, but not in exemptions	7,604	28.9	816	22.9

* Form 1040A may be used if adjusted gross income is less than $5,000, not more than $100 of which is from wages not subject to withholding and from dividends and interest. Collectors' 1948 Form 1040 returns are those with less than $7,000 of adjusted gross income and with gross receipts of less than $25,000 from business or profession.

† Exemptions within an immediate family mean the taxpayer, his spouse, their old age and blindness exemptions, and their children.

‡ Exemptions outside immediate family mean all exemptions not included in footnote †, such as, taxpayer claiming a parent, brother or sister, and more distant relatives.

§ Because of the small number of returns in this group, the entry is probably subject to relatively large estimating error and should be used with caution.

Source: Bureau of Internal Revenue, Audit Control Program for 1948 individual income tax returns.

standard deduction has made a major contribution to the successful administration of the modern, mass personal income tax by greatly reducing the importance of personal deduction errors. Less than 200,000 of the 43 million returns with standard deductions are estimated to contain major errors in personal deductions, or only one out of every 250 of this type of return. On the other hand, about one out of three of the 9 million returns listing itemized deductions probably contains major errors in these personal deductions.

As a result of Audit Control Program studies in the dividend and interest income area, the Bureau has: (1) required itemization of dividend and interest incomes on Form 1040 tax returns; (2) adopted regulations requiring corporations to file information returns for all dividend payments—regardless of size; and (3) improved the administrative procedures regarding the use of information returns. These administrative changes tend to improve both compliance and verification procedures so that dividend and interest

TABLE 8

PRELIMINARY ESTIMATES OF NUMBER OF 1948 INDIVIDUAL INCOME TAX RETURNS WITH INCOME OR LOSS FROM BUSINESS OR PROFESSION AND NUMBER OF SUCH RETURNS WITH TAX CHANGE DISCLOSABLE BY AUDIT, CLASSIFIED BY TYPE OF RETURN AND SIZE OF INCOME

Type of Return and Size of Income *	All Returns Filed	Total Returns with Tax Change	Per cent with Change
Number of Returns with Income or Loss from Business or Profession (in thousands)			
1. Grand total	7,260.1	3,520.0	48.5%
2. Total collectors' returns	5,970.1	2,565.3	43.0
(a) Form 1040A	24.5	24.5	100.0
(b) Form 1040	5,945.6	2,540.8	42.7
3. Total agents' returns	1,290.0	954.7	74.0
(a) Under $25,000	1,207.2	888.6	73.6
(b) $25,000 and over	82.8	66.1	79.8
(1) $25,000 to $100,000	78.5	62.5	79.6
(2) $100,000 and over	4.4	3.6	82.2
Number of Returns without Income or Loss from Business or Profession (in thousands)			
4. Grand total	44,878.1	10,204.7	22.7%
5. Total collectors' returns	43,262.8	9,319.3	21.5
(a) Form 1040A	19,300.8	2,171.7	11.3
(b) Form 1040	23,962.1	7,147.5	29.8
6. Total agents' returns	1,615.2	885.4	54.8
(a) Under $25,000	1,441.6	771.8	53.5
(b) $25,000 and over	173.7	113.6	65.4
(1) $25,000 to $100,000	161.7	105.4	65.2
(2) $100,000 and over	12.0	8.2	68.8

* Form 1040A may be used if adjusted gross income is less than $5,000, not more than $100 of which is from wages not subject to withholding and from dividends and interest. Collectors' 1948 Form 1040 returns are those with less than $7,000 of adjusted gross income and with gross receipts of less than $25,000 from business or profession. Agents' 1948 returns are Forms 1040 with $7,000 or more of adjusted gross income or with gross receipts of $25,000 or more from business or profession.

Source: Bureau of Internal Revenue, Audit Control Program for 1948 individual income tax returns.

income errors will be harder to make and easier to detect. Dividend and interest errors will continue to present difficult enforcement problems, however, because they are relatively small and too costly to find by ordinary audit methods. It is for these reasons that the Bureau has recommended consideration of a withholding tax on interest and dividend payments.

Based on results of the Bureau's Audit Control Program, it is estimated that the 7 million 1948 income tax returns filed by individuals with business and professional incomes [12] are more frequently in error, have larger amounts of tax change, and produce more dollars of tax change per man-year of examination effort expended than is the case regarding the 45 million returns without business incomes. Table 8 indicates that almost half of the business returns filed contain tax

[12] That is, all returns with Schedules C and Form 1040F; these include professional men and sole proprietors of businesses and farms, but exclude returns with partnership income.

TABLE 9

PRELIMINARY ESTIMATES OF TAX CHANGE DISCLOSABLE BY AUDIT AS A PROPORTION OF TAX VOLUNTARILY REPORTED ON 1948 INDIVIDUAL INCOME TAX RETURNS WITH PROFIT OR LOSS FROM BUSINESS OR PROFESSION, CLASSIFIED BY TYPE OF RETURN AND SIZE OF INCOME

Type of Return and Size of Income *	Tax Liability Voluntarily Reported (Millions of dollars)	Tax Change Disclosable by Audit		
		Amount (Millions of dollars)	Per cent to Tax Reported	Average Amount per Return
All Returns with Income or Loss from Business or Profession				
1. Grand total	3,372.4	717.9	21.3%	$ 99
2. Total collectors' returns	741.8	318.5	42.9	53
(a) Form 1040A	2.1	2.1	99.7	84
(b) Form 1040	739.8	316.4	42.8	53
3. Total agents' returns	2,630.5	399.5	15.2	309
(a) Under $25,000	1,169.9	300.2	25.7	249
(b) $25,000 and over	1,460.6	99.3	6.8	1,198
(1) $25,000 to $100,000	870.2	80.3	9.2	1,024
(2) $100,000 and over	590.4	18.9	3.2	4,312
All Returns without Income or Loss from Business or Profession				
4. Grand total	12,063.2	800.3	6.6%	$ 18
5. Total collectors' returns	7,154.7	566.7	7.9	13
(a) Form 1040A	2,437.0	136.1	5.6	7
(b) Form 1040	4,717.7	430.7	9.1	18
6. Total agents' returns	4,908.5	233.6	4.8	145
(a) Under $25,000	2,129.5	131.7	6.2	91
(b) $25,000 and over	2,779.0	101.9	3.7	587
(1) $25,000 to $100,000	1,929.9	77.8	4.0	481
(2) $100,000 and over	849.1	24.1	2.8	2,015

* Form 1040A may be used if adjusted gross income is less than $5,000, not more than $100 of which is from wages not subject to withholding and from dividends and interest. Collectors' Form 1040 returns for 1948 are those with less than $7,000 of adjusted gross income and with gross receipts of less than $25,000 from business or profession. Agents' returns for 1948 are Forms 1040 with $7,000 or more of adjusted gross income or with gross receipts of $25,000 or more from business or profession.

Source: Bureau of Internal Revenue, Audit Control Program for 1948 individual income tax returns.

errors and that this frequency of error is more than twice the frequency found on nonbusiness returns. Table 9 presents estimates indicating that almost one-half of the total tax change is likely to be found on returns with income or loss from business or profession. Table 10 shows that, under Audit Control Program procedures, business returns produce a larger tax change per man-year of examination effort, at all levels of income.

No major aid to tax enforcement similar to the withholding tax method has yet been found to reduce the difficulty and cost of verifying the income and deductions voluntarily reported by individuals operating businesses and professions. At present, there is no alternative to a thorough examination of the business books and records by experienced tax enforcement officers, if adequate verification of business income is to be attained. It is already the policy of the Bureau of Internal Revenue to examine on a two-year cycle basis all individual returns reporting both business and nonbusiness incomes of $25,000 or more, and to increase the proportion of business returns with incomes under $25,000 that is examined. As indicated in Table 9, the two classes of business returns with incomes under $25,000 account for about 85 per cent of the total tax change attributable to business returns. Henceforth, these returns will be segregated from those without business incomes to permit more careful scrutiny, at lower cost, for audit selection purposes. As additional manpower is made available, an increased proportion of these returns will be examined and perhaps eventually a cycle basis of audit may be adopted. However, any large increase in the percentage of the more than 7 million individual business returns that can be examined each year will necessarily require a large increase in the staff of examining officers of the Bureau of Internal Revenue who are skilled in auditing business books and records.

TABLE 10

COMPARISON OF THE ESTIMATED PRODUCTIVITY OF 1948 INDIVIDUAL INCOME TAX RETURNS * SHOWING PROFIT OR LOSS FROM BUSINESS OR PROFESSION WITH RETURNS WITH NONBUSINESS INCOME, CLASSIFIED BY TYPE OF RETURN AND SIZE OF INCOME

Type of Return and Size of Income †	Dollars per Man-Year	
	Business Income	Nonbusiness Income
All Returns Filed ‡		
Collectors' Form 1040 ..	$ 21,970	$ 16,291
Agents' under $25,000 ..	33,618	19,911
$25,000 to $100,000	99,024	58,305
$100,000 and over	273,436	167,391
Returns with Tax Change Only §		
Collectors' Form 1040 ..	$ 37,537	$ 37,516
Agents' under $25,000 ..	41,196	28,725
$25,000 to $100,000	112,891	75,660
$100,000 and over	305,403	208,888

* These estimates include only the man-hours and tax changes related to the 1948 "audit sample" returns. They exclude the information pertaining to "other returns" reported in column 3, Table 4.

† Collectors' Form 1040 returns for 1948 are those with less than $7,000 of adjusted gross income and with gross receipts of less than $25,000 from business or profession. Agents' returns for 1948 are Forms 1040 with $7,000 or more of adjusted gross income or with gross receipts of $25,000 or more from business or profession.

‡ These estimates are comparable to those found in column 1, Table 4.

§ These estimates are comparable to those found in column 2, Table 4.

Source: Bureau of Internal Revenue, Audit Control Program for 1948 individual income tax returns.

TOWARD RATIONALITY IN A RETAIL SALES TAX

MILTON C. TAYLOR *

PROFESSOR JOHN F. DUE in a recent article [1] has sounded a call for research which will produce a rational foundation for the retail sales tax. He points out that although the tax was born of expediency in the depressed thirties it has now assumed both a status of fiscal importance and apparent permanency at the state level of taxation. Despite its present status and despite serious incongruities, many of the levies continue to exist in their virgin form of adoption. The purpose of this paper is to substantiate by way of illustration the need for fundamental theoretical analysis of the sales tax by considering in historical perspective one aspect of the tax as it has evolved in Michigan, a generally typical sales tax state.

One of the most difficult and important problems to be faced in both the process of legislating and administering a sales tax is the determination of the taxable base. At least two significant problems arise in this regard: (1) What does the legislature in its statutory directive intend to be taxed? (2) In terms of rationality, neutrality, administrative enforceability, and other requirements of a good tax, what *should* be the base of the tax, in the event that there is a variance between the legislature's intent and a desirable tax structure?

The Michigan legislature, in its original act, defined the tax base as follows:

> The term ' sale at retail ' means any transaction by which is transferred for consideration the ownership of tangible personal property, when such transfer is made in the ordinary course of the transferor's business and is made to the transferee for consumption or use or for any other purpose than for resale in the form of tangible personal property.[2]

It should be noted first, from the above statutory requirement, that the legislature intended to tax only the sale of tangible personal goods. The tax was levied on only one of the four categories of wealth; it was not a tax on land, improvements, or intangible personal property. And it should also be noted that the tax base excluded services. Property, to be taxable when transferred, was required to be both personal and tangible. The second specification was that the sale must be consummated in the ordinary course of the transferor's business—in other words, not a casual sale. And lastly, it was stipulated that the tax was only to be imposed on goods that were sold for use or consumption; goods purchased for resale were specifically exempted.

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[1] J. F. Due, " Retail Sales Taxation in Theory and Practice," *National Tax Journal*, III (1950), pp. 314-325.

[2] Public Acts, 1933, No. 167, sec. 1 (b.1).

This last requirement is of major importance. It would appear, at least by the legislature's original directive, that the tax was not intended as a levy on retail sales *per se*, that is, sales to over-the-counter consumers; rather, it was a tax on the sale of all goods which were intended for use or consumption, regardless of who used them, business or ultimate consumers. It is possible, although this is a matter of speculation, that this aspect of the tax is still commonly misunderstood by the public in Michigan, even though the tax has been in operation for nearly twenty years. In other words, it is possible that nonbusiness consumers are misled by the term " retail " sales tax and by their personal experience of paying the tax. In a similar vein, it is possible that consumers in Michigan commonly believe, because of the separation of the tax from the price of the product, that they have a legal obligation to pay the tax.

Since the tax was designed as a levy on the transfer of goods, provided that the purchaser used or consumed them, it may be observed that a distinction between goods sold by a manufacturer, wholesaler, or retailer was irrelevant. Nor was it pertinent to consider whether the goods were purchased by a manufacturer, wholesaler, or retailer. The only relevant question was whether the goods were purchased for consumption or use, and the determination of exemption is turned on the question of whether the goods were not consumed, that is, purchased for resale.

A tax of this kind is, therefore, in large part, a multilevel rather than a single-stage levy, and is subject in some considerable measure to the inadequacies of a multilevel tax. Dominant among these are two types of tax accumulation: pyramiding of the tax which occurs when the levy is assessed at the manufacturing level and/or some other level of production anterior in time to the retail level; and pyramiding which occurs when fixed percentage markups are a characteristic mode of pricing. With these two conditions, the base for the markup includes the tax, with the dual result that a profit is made by the producers on the tax itself, and the tax undergoes a cumulative build-up by the time it reaches the retail level. Accumulation may occur even in the absence of fixed percentage markups. Whenever there is a multilevel tax, some shifting of the tax paid by producers is customarily presumed, with the result that the ultimate consumer may pay more than the statutory rate. It should be noted that these two features are undesirable, since they cause discrimination among particular consumers and producers; and both are avoidable in a retail, over-the-counter type of sales tax. At the same time it should be mentioned that these features of tax accumulation were inherent in the Michigan sales tax because of the legislature's definition of a retail sale, rather than by any administrative action or judicial decree.

The obvious question which may be raised at this point is: Why could not these difficulties be obviated by the simple expedient of taxing exclusively at the individual, nonbusiness, consumer level, with an exemption of all sales to business? And the equally obvious answer is the probability of extensive evasion. Such a provision would mean that all business purchases of radios, automobiles, fuel, typewriters, and so forth, would be exempt for business consumers, but, on the other hand, would

be taxable to nonbusiness consumers. And since in large measure there is very little qualitative difference between business and nonbusiness consumption, the apprehension with regard to widespread evasion under a single-level, over-the-counter tax with a general business exemption is substantially realistic. The old cliché of "I can get it for you wholesale" would be changed to "I can get it for you tax free."

One solution to this problem is to levy a tax on the transfer of tangible personal property to *all* consumers, both business and nonbusiness, or to have a multilevel tax, but to ease the effect of tax accumulation by exempting sales for resale. Although at best this solution is only an imperfect compromise, it raises, in addition, difficult problems of definition. At the outset, there is the question whether "sales for resale" should include both goods which change their form before being sold, as well as goods which are not physically altered in any way. Because the original act in Michigan was silent on this point, the administrative officers were immediately pressed into the adoption of a working rule. Their first determination, which appeared in the *Preliminary Regulations* of June 30, 1933, held that both of the above categories of goods were exempt; for example, steel purchased for ultimate use in the manufacture of an automobile was construed to be a product purchased for resale. And in order to implement this decision, the administrative officers adopted what is commonly referred to in sales tax literature as the physical ingredient rule: if purchased goods become a physical ingredient in products ultimately resold, such goods are exempt from the sales tax.

The physical ingredient rule is a workable administrative device, but it also raises some difficult administrative problems. There is, for example, a rather nebulous middle ground involving such products as catalytic agents, medicines, and containers, in which there is some question as to whether the goods become a component part of the end product. Other goods also have a dual purpose; coal, for example, may be used for both the production of heat and coke. But, in retrospect, these are rather minor difficulties which merely loomed large in the early years of the administration of the act.

In Michigan the objections raised by organized farm groups and manufacturers were a much more important development of the adoption of the ingredient rule than these administrative problems. With the adoption of the ingredient rule both groups were rudely awakened to a new burden of taxation as they found that a considerable portion of their costs, most significantly equipment and fuel, was subject to the sales tax.

Apparently at the behest of these two groups, the legislature, only eighteen days after the first administrative ruling with regard to sales for resale, hurriedly reconvened and passed House Concurrent Resolution No. 96, which reads in part as follows:

> Resolved that it was the intent of the legislature that the State board of tax administration be empowered and authorized by said act to define and liberalize the definition of a sale at retail; and . . .
>
> Resolved, that the legislative intent, in passing Act No. 167, Pub. Acts 1933, was to exclude from the provisions of the act any sale of anything used exclusively in the

manufacturing, assembling, producing, preparing, or wrapping, crating, and/or otherwise preparing for delivery any tangible personal property to be sold; and be it further

Resolved, that the word " producing " as used herein shall include agricultural production.

It should be noted, in view of the generality in the language, that the resolution said " *liberalize,*" but on the other hand, the exemption is held to be applicable to " anything used exclusively in the manufacturing, assembling, producing, preparing, or wrapping, crating, and/or otherwise preparing for delivery any tangible personal property to be sold . . ." The directive " liberalize " apparently implied that the business exemption should be broadened, but the degree to which it should be extended was left indeterminate by the vagueness in the language which defined the exemption. In particular, it was hardly possible to determine whether the exemption was intended to include sales to wholesalers and retailers, as well as to agricultural producers and manufacturers. If only the latter, it was equally difficult to determine whether the exemption was intended to be all-inclusive, or selective in some measure.

The immediate response of the Board of Tax Administration was to ignore the resolution; two days after the legislative promulgation was announced, supplementary regulations were issued, but the pertinent provisions merely redefined and made more explicit the ingredient rule. In the following six weeks apparently some pressure (it was less likely a process of education) was brought to bear on the administrative officers and, consequently, on August 30, 1933, the Board of Tax Administration revised its regulations to comply with the " clear " intent of the legislature. When the preceding argument with regard to administrative feasibility of a general exemption is borne in mind, the new regulation was quite unexpected, for it held that *all* sales to business were exempt without qualification. This broad interpretation, in turn, was short lived for on September 25 the Attorney General ruled that the ingredient principle had to be followed. The Board immediately rescinded its new regulation.

The legislature, apparently dissatisfied with these developments, reconvened on December 20, 1933. One can easily imagine the reason for its dissatisfaction, since House Concurrent Resolution No. 96 had been ostensibly passed in order to " liberalize " the ingredients rule, and this mandate had not reached fruition. One can also presume, in the face of the developments, that the purpose of reconvening would be to make more explicit the original legislative intention. Consequently, it is surprising to find that the members merely reiterated their previous ambiguity:

That the legislature hereby requests the State board of tax administration to abide by the legislative intent relative to Act No. 167 Pub. Acts 1933, as contained in house concurrent resolution No. 98 of the 1933 session of the legislature.

It is quite obvious now and must have been at the time of this difficulty, that the administrative officers did not know what the legislative body wanted, except that it was desirous of some kind of business exemption. The Board of Tax Administration had adopted the ingredient rule, but the legislature had objected; then the Board had exempted

all business purchases, and the Attorney General had intervened; and when the ingredient rule was re-established, the legislature objected again. Apparently frustrated, and not knowing what to do, the administrative officers retained the ingredient rule, probably with the intention of waiting until the legislature would resolve the problem.

It was at this point in the developments that the problem came before the Michigan Supreme Court in the case of *Boyer-Campbell* v. *Fry*.[3] Or perhaps more properly it should be said that the wholesalers of Michigan came to Court, for some twenty-five of the more important firms leagued together to present their case. The theme of the plaintiffs is a well-known one: the sales tax thus construed (with only an exemption for resale) will cause great and irreparable injury to business interests, and will result in discrimination close to economic disaster; such a tax will not destroy business, but it will drive it out of the state; wholesalers only have a profit of from three to ten per cent, thus they cannot absorb the tax or they will go out of business; they cannot pass on the tax, or they make a gift of their business to out-of-state competitors; they can only migrate from Michigan, and one-half, or at least one-quarter will migrate and bring economic disaster to Michigan.

The Court, in giving its ruling, appeared to use good judgment in this case in not meddling with the problem, despite the histrionics. As an introductory admonishment, the ruling first observed that the plaintiffs made no mention in their plea concerning the saving in property taxes which the sales tax made possible. Then the Court admonished the legislature for not declaring its intention clearly or by amendment. The decision maintained that the responsibility for the justice or the wisdom of taxation remained with the legislature. It was the province of the Court to construe and not to make the laws, and since the legislature had been in session for the past three months, why had not the desired relief been forthcoming? The Court concluded that the present interpretation of the Board (the ingredient rule) was reasonable and sensible, and rendered the various provisions of the act consistent and harmonious.

One can well take exception to this last statement—that the rule renders the various provisions of the act consistent and harmonious—but the statement is essentially dictum. It is hardly possible, however, to dispute the correctness of the Court's position with regard to the onus of responsibility for the problem presented. It is obvious that the administrative officers did not know what the legislature wanted, evident that direction was needed, and definite, too, that under the State Constitution it was the duty of the legislature to explicitly indicate its intention.

In retrospect, there appear to be two possible reasons for the legislature's disinclination to deal with the problem—each of these, of course, is a matter of speculation. The problem of granting exemptions to business sales under a sales tax is admittedly difficult, and lethargy could account for the legislature's preference to have the administrative officers assume the technical responsibility. Secondly, it is possible that the legislative members preferred

[3] 271 Mich. 282.

only a selective exemption among businessmen; that is, they wanted sales to agricultural producers and manufacturers to be exempt, but wished those to wholesalers and retailers (except goods for resale) to be taxable. In other words, the legislature wanted to classify the taxpayers by economic groups, but did not wish to have such obvious discrimination openly and explicitly stated by statute. Thus, their ambiguity was intentional, in the hope that the administrative officers would "sense" the intended discrimination, and assume the responsibility for such a classification.

Such speculations in the realm of political machinations may appear to be far-fetched; nevertheless they seem plausible for the sequel of the story is that the legislature amended the act in 1935 in order to exempt goods sold for consumption or use in industrial processing and agricultural producing. But again, the directive was oblique and obtuse! The amendment merely stated that the tax was not applicable when goods were sold for consumption or use in industrial processing or agricultural producing. This provision may be interpreted in either of two ways: broadly, in the sense that all goods sold to such businesses are exempt; or narrowly, with the meaning that it is applicable only to goods used *directly* in industrial processing and agricultural producing. The latter interpretation would exempt industrial machinery, provided that it was used in the actual and immediate process of production, but would not, for example, exempt a typewriter used in the office of an industrial plant, or a truck used to deliver the finished goods.

In the absence of a specific directive from the legislature, the administrative officers adopted the narrow interpretation, which consequently has required a determination for every article purchased by industry and agriculture as to whether it is directly or indirectly used in production. This problem has been a continuous administrative ogre. To give but two examples of the difficulties: fuel must be prorated if used in both the office and processing part of a factory; and light bulbs are taxable if used in the warehouse of a factory, but exempt if used in the actual processing part of the plant.

The necessity of differentiating between the direct and indirect use of goods significantly distracts from the rationality of the sales tax, for it makes the levy more a system of selective excises than a uniform tax on consumption. Assuming that a single-stage, individual, nonbusiness levy is preferable to the multilevel type, and assuming also that such a tax is not administratively feasible if all sales to business are exempt, the proposition still remains that it is desirable to have as many business exemptions as possible, and to tax only those articles sold to business which may be used by both business and nonbusiness consumers. Therefore, the distinction between direct and indirect use is essentially irrelevant. The objective should be to exclude purchases which are significant in business costs, wherever possible, and to tax only those items necessary to minimize evasion. And certainly, there are no desirable fiscal or economic advantages attained by granting exemptions only to industrial processors and commercial farmers,

and not to other businessmen. Goods for resale have been declared exempt in Michigan apparently on the justification that such an exemption reduces the accumulation of the tax. Yet a retailer is subject to a tax on all purchases other than those for resale, even though it is possible that the tax on the former is as readily shifted as a tax on the latter.

The Michigan principle of excluding only equipment, machinery, and supplies which are used directly in agricultural production and industrial processing clearly results in multiple taxation, unneutrality on both the business and consumer levels, and an administrative burden. But it is far easier to criticize the Michigan regulations than to offer a satisfactory alternative. Whereas the desirable principle of exclusion is clear in theory, that is, there should be a minimum of multiple level taxation commensurate with administrative feasibility, great difficulties are encountered in defining explicitly the type or use of product which should be excluded.

The nub of the problem, as indicated previously, is the fact that a large number of materials are purchased by both individual nonbusiness consumers as well as business firms. Some lines of distinction must of necessity be drawn between exempt and nonexempt goods if the multiple application of the tax is to be reduced and evasion avoided. Yet the number and variety of the articles involved preclude the possibility of drawing lines of distinction on the basis of groups of products. It is necessary to decide in each particular instance where the dividing line should be drawn between exempt and nonexempt goods, and to draw the line so that there is neutrality among dissimilar businesses as well as among consumers. It is probably in this area of exemption, as it applies to machinery, equipment, and related articles, that the most serious difficulties of devising a rational and logically consistent retail sales tax are found. The tax administrator becomes most frustrated here, for the dilemma is a very real one.

The foregoing analysis is essentially explorative and does not suggest a solution to the problem discussed. It should indicate, however, that the retail sales tax in Michigan, as in other states, is far from a simple and easily administered tax. In view of the gravity and the ramifications of the problem, the discussion should also serve to confirm the necessity for research into the theory and practice of the retail sales tax if these revenues are to be incorporated into a structurally sound tax system.

IMPROVEMENT IN REAL ESTATE TAXATION THROUGH ASSESSMENT-SALES STUDIES *

WILLIAM G. MURRAY †

EQUALIZATION between individual assessments within the taxing district is the heart of the real estate taxation problem. This critical phase of assessment, which may be called internal equalization, should precede the state-wide or external equalization between counties and cities. A means of bringing about this desired equity is to interest assessors in making assessment-sale studies and in using the results in their valuation work. A program of this kind, started in Iowa in 1950, is beginning to bear fruit as will be evident from the discussion which follows.

Great stress has been placed by public finance authorities on assessment inequalities and the need for better original assessments. According to Kendrick, "The principal need in the administration of the property tax is an equitable original assessment of real estate." [1] After commenting on the difficulties of equalizing assessments between counties, Groves states, "Much more serious, usually, are the inequalities among taxpayers within the same district." [2] Wholesale, or what I prefer to call external, equalization is not an easy way out according to Jensen who declares, "There is no possibility of equalizing unequal individual assessments by means of blanket increases or decreases. The only way to equalize assessments is to make them equal in the first place." [3] The writings of Lutz, Buehler, Allen and Brownlee, Lindholm, Shultz and Harriss, and others contain statements and supporting evidence pointing to the same conclusions. Two facts are clear: first, assessment inequality is a major problem; and second, the place to begin is in the local district—internal equalization should come before external equalization.

An interest in correcting individual inequalities must be shown by the local assessor if the desired improvement is to be made in assessments. One method of developing this interest is to help the assessor gain through his own efforts an accurate picture of the inequalities which prevail within his district. When the assessor sees the situation in this manner he will be more likely to consider procedures for correcting whatever inequities are revealed.

The program in Iowa to assist county and city assessors in analyzing their problems began in the summer of 1950 with an informal working agreement among officials of the State Tax Commission, the State Association of Assessors, and Iowa State College. These

* Journal Paper No. J-2054 of the Iowa Agricultural Experiment Station, Ames, Iowa. Project No. 1069.

† The author is head of the department of economics and sociology at Iowa State College.

[1] M. S. Kendrick, *Public Finance, Principles and Problems* (New York: Houghton-Mifflin, 1951), p. 224.

[2] H. M. Groves, *Financing Government* (3d ed.; New York: H. Holt and Company, 1950), p. 59.

[3] J. P. Jensen, *Government Finance* (New York: Thomas Y. Crowell Company, 1937), p. 259.

three groups set as their objective a training program for the next quadrennial real estate assessment in 1953. Uppermost in the minds of those participating in this program were aids to the assessor which would enable him to do a better job in obtaining equitable assessments within his county or city. The first phase of the program was the use of assessment-sale studies to acquaint assessors with their local situation. The second phase was a school for assessors held in September, 1951, at Iowa State College. The third and final phase, tentatively scheduled for the fall of 1952, is a series of district conferences on detailed methods for use in the 1953 assessment.

How assessors in Iowa have taken hold of the assessment-sale study can be illustrated by means of several examples. At the state conference of assessors in the fall of 1950, assessors were informed that a limited amount of assistance would be available from personnel at Iowa State College for those assessors interested in making these studies. More assessors asked for help than could be accommodated but assistance was given wherever possible.

One of the counties where assistance was requested was Allamakee in the northeast corner of the state. The county assessor, A. L. Hansmeier, was interested in making a thorough-going analysis of the assessments in his county. Available as an aid was a recent county-wide soil survey completed by soil specialists of Iowa State College and the United States Department of Agriculture. Members of the soils staff at the college had started to adapt the soil data for use in assessments. Before productivity ratings were applied to the soils, however, some objective measure was desired of the extent to which existing assessments were inaccurate or inequitable. It was decided to see what information assessment-sale ratios would provide in answer to this question. With this as a background and the interest of Mr. Hansmeier, an assessment-sale study was planned. The procedure followed was based largely on the outline in "Preliminary Report of the Committee on Sales Ratio Data and Guide for Assessment Ratio Studies" issued in 1950 by the National Association of Tax Administrators.

As a starter, farm real estate sales in 1949-1950 in one township picked at random were taken off the deed books at the court house. Unfortunately, there were only four sales recorded for this township during the whole two-year period. This revealed a definite handicap which may occur in assessment-sale studies—namely, a lack of bona fide sales. In this township most of the sales were family transfers which could not be used. The four sales which were obtained, however, did suggest a problem of assessment inequality that would bear further investigation. Information on the four sales follows:

Sale	Sale Price Per Acre	Assessment Per Acre *	Assessment-Sale Ratio
a	$100	$45	45%
b	84	40	48
c	79	46	58
d	16	15	94

* 60 per cent of actual value as determined by the assessor.

The assessor recognized at once the wide disparity between the high ratio of 94 and the low of 45 as indicative of a problem he had to tackle, the overassessment of low value land.

In order to ascertain the seriousness of this overassessment, the assessor proceeded with some assistance to collect data on all 1949-1950 farm sales. The results, tabulated in Table 1, show how widespread this overassessment was in four different districts of the county. These figures, which the assessor helped to gather, yielded strong evidence of overassessment of low value properties. The fact that the same situation prevailed in all four districts of the county indicated to the assessor that he faced a county-wide problem.

A third check was made to determine any bias relative to location (distance from town) and road type. Here the results were not as conclusive. A slight tendency for overassessment was present for farms located on poor roads and farms with poor access, such as those with long private lanes. These factors, of course, are directly associated with low value farms.

With this information the assessor began planning to correct for the bias in the next assessment. The assessment-sales information along with the data on soils and soil productivity provided the necessary background for an objective revaluation of all the farm land in the county.

TABLE 1

ASSESSMENT-SALE RATIOS FOR ALLAMAKEE COUNTY, IOWA 1949-1950 BY DISTRICTS *

(Averages are Medians)

Sales Ranked by Price Per Acre	Price Per Acre	Average Ratio	Ratios by Districts			
			#1	#2	#3	#4
First group	$156	37%	32%	33%	34%	40%
Second group	100	42	43	48	42	41
Third group	63	52	51	51	47	59
Fourth group	33	66	88	68	55	67
Median (average) ...	80	45	43	51	42	46

* County was divided into four districts by grouping townships alphabetically.

A second check of the 1949-1950 sales was made to determine the extent of bias in the assessment of different sized tracts. Large tracts, it was found, were overassessed. When the sales were classified by size into four groups, the group with the largest units had an average ratio of 52 per cent; the next largest, 47 per cent; the third group 40 per cent; and the group of smallest tracts, only 35 per cent. Large size, low value properties, it was evident, were overassessed while small size, high value properties were assessed properly assuming an average of 35 per cent as the desired objective. A check of ratios in seventeen Iowa counties gave an average ratio of 35 per cent.

A second Iowa county where sales ratios were computed was Story, and in this county the assessor, Rolland Philpot, with some assistance, worked out the ratios for the farm sales in the 1949-1950 period. Two preceding assessment-sale studies of farms provided significant comparisons. As shown in Table 2, in 1937-1938 the spread of ratios around the average was wide, indicating considerable lack of uniformity in the assessment, while on the other hand, the spread in 1927 and in 1949-1950 was concentrated around the aver-

age, an indication of a relatively uniform equitable assessment.

A striking contrast between the two older periods and the recent one is revealed by classifying the ratios according to values. The results, shown in Table 3, are computed on a percentage basis because of the difference in the average ratios of the three periods. This places each period on the same basis, giving the variations from the average as departures from 100 per cent. In the recent period, the variations were less than 7 per cent each side of 100 per cent while in the earlier periods the variations were over 18 per cent in each

TABLE 2

CLASSIFICATION OF FARM SALES IN STORY COUNTY, IOWA BY ASSESSMENT-SALE RATIOS, 1927, 1937–1938, AND 1949–1950

Assessment-Sale Ratio Group	Number of Sales		
	1927 *	1937–1938	1949–1950
0– 9	..	..	..
10–19	..	..	2
20–29	2	5	74
30–39	6	10	58
40–49	20	30	5
50–59	15	68	1
60–69	7	44	..
70–79	3	33	..
80–89	1	8	..
90–99	..	8	..
100–Over	..	3	..
	54	209	140
Median	49.6%	58.6%	29.5%
Coefficient of Dispersion	12.2	15.8	11.8

* Ratios for 1927 were grouped 21–30, 31–40, etc.

TABLE 3

ASSESSMENT-SALE RATIOS AS A PERCENTAGE OF THE AVERAGE RATIO CLASSIFIED ACCORDING TO SALE PRICES, STORY COUNTY, IOWA, 1927, 1937–1938, AND 1949–1950 *

Sales According to Price	Assessment-Sale Ratios (Per cent of the Average)		
	1927 †	1937–1938	1949–1950
High One-Fourth	77.4%	81.9%	94.7%
Second One-Fourth	90.9	95.5	94.0
Third One-Fourth	102.5	110.9	104.4
Low One-Fourth	127.7	121.2	106.7
Average (Per cent)	100.0%	100.0%	100.0%
Average (Median)	49.6%	58.6%	29.5%

* Source: 1927 data from "Assessment of Real Estate in Iowa and Other Mid-Western States," R. W. Nelson and G. W. Mitchell, Iowa Studies in Business, No. 10. (State University of Iowa, Iowa City, January, 1931) p. 55. The other two periods are based on data from Iowa Agricultural Experiment Station, Ames, Iowa.

† Approximate.

direction. The natural question to ask after glancing at the table is—what happened to account for the change between 1938 and 1949? The answer is simple—a reassessment in 1949 based on a detailed survey of the soils and on key appraisals. One of the major objectives in the reassessment was to achieve internal equalization through appraisals which reflected value differences as farming districts. (See Table 4.) Note the lack of concentration about the average in 1927 and the heavy bunching of the ratios about the average in the recent period.

One of the surprising incidents in the assessment-sale study in Ames in the recent period was the assistance extended by real estate brokers. When the assessor, Art Mendon, asked the real

TABLE 4

CLASSIFICATION OF ASSESSMENT-SALE RATIOS IN AMES AND CARROLL, IOWA, 1927 AND 1949–1950 *

Assessment-Sale Ratios of:	Number of Sales			
	Ames		Carroll	
	1927	1949–1950	1927	1949–1950
1–10	0	1	0	0
11–20	3	36	4	3
21–30	8	137	6	90
31–40	11	19	7	34
41–50	12	2	2	7
51–60	4	..	8	2
61–70	2	..	3	0
71–80	1	..	1	0
Over 81	3	..	1	0
Total	44	195	32	136
Average ratio	44.5%	24.7%	43%	28%

* Source: Same as Table 3. The 1949–1950 figures for Carroll furnished by W. T. Florencourt.

registered in the market. The wide difference between the average ratio of 58.6 per cent in 1937-1938, and 29.5 per cent in 1949-1950 is accounted for by a rise of about 120 per cent in sale prices while assessed values increased only slightly.

Improvement in assessment through the use of ratios applies to sales of city real estate as well as to those in the farming areas. Comparisons of ratios in Ames (Story County) and Carroll, Iowa, in 1927 and 1949-1950 show the same kind of progress as that in the

estate board if they would go over some of the sales to determine their bona fide character, the president of the board called a dinner meeting of the group to provide the desired information. Following the meeting, the brokers went one step further and offered to furnish the assessor with up-to-date lists of their sales, provided he would not use the data for any other purpose than to get an accurate check on the sale prices of bona fide transfers. An agreement was reached on this basis, the lists were furnished, and the assessor found that this

source not only gave more accurate information on sale prices, an all important item in figuring ratios, but in addition was more timely because some of the sales reported by the brokers had not yet reached the office of the recorder.

Another aid which the brokers provided was information on family transfers, trades and other non bona fide transactions. This is exceedingly important because if this type of sale is allowed to get into the results it tends to give a distorted picture of the situation inasmuch as such sales are usually below the market, resulting in a bias toward higher ratios. A sale from father to son-in-law (not evident in the names of the parties), inclusion of personal property along with real estate, and the existence of a trade, are examples of sales which might pass for regular transactions but which some broker can usually detect because of his knowledge of the circumstances surrounding the sale. When the assessor in this instance saw the large number of sales which had to be discarded because they were not bona fide, he acquired a healthy skepticism toward all sales until he had had them checked by someone in a position to substantiate their bona fide character.

Above everything else, the assessor must see the usefulness of the sales ratios for the improvement of assessments in his district. If the ratios are so few in number as to be unreliable or are not useful for other reasons there is no point in continuing the project in that district. Nor should the study go on if the assessor is not interested after he has worked with the ratios long enough to get a good sample. Fortunately, most assessors who have been sufficiently interested to start calculating assessment-sales ratios have become enthusiastic after they have caught on to the method and seen what a year's sample reveals.

Once an assessor has taken part in a ratio study and grasped the significance of the results, he is likely to apply the findings in his own district. Richard A. Cherney, county assessor of Grundy County, Iowa, wrote the author as follows on the usefulness of the ratio in his work:

> I have found the sales ratio a very valuable tool for the assessor. After working with this ratio and using it, I would not be without it. Its greatest value is as a means of establishing a factual level of assessed value—31.7% of current farm selling price in Grundy County. This percentage enables us to convert assessed values into current selling prices or vice versa, which is an excellent means of checking the accuracy of assessment. For example, there was a man in the office who was protesting the taxes on his farm and he made the statement that he would sell it for $175 an acre. Converting our assessed value into selling price indicated a price of $227 per acre, which we both agreed was too high in comparison to neighboring land.
>
> Also this ratio study has made it possible to compare the level of assessed values for urban and rural properties. This is difficult to do by any other method than the sales ratio.

Highly important in ratio studies is transfer of responsibility for the project to the county or city assessor. What assistance is given should be solely to get the work under way. This can be done by going through the procedure for a small sample, including not only the

calculation of the ratios but an analysis to show the frequency distribution, dispersion and the bias, if any, in over- or underassessment of certain types of properties, such as the overassessment of low value properties. Unless the assessor understands the process, he is not likely to do an accurate job. And it is an accurate analysis of the sales ratios which gives the assessor the information he needs to make a good internal equalization between individual properties.

By October, 1951, slightly over a year after the program started, assessors in 13 counties out of the 99 in Iowa had completed assessment-sale studies of farm sales in their counties. In addition, studies for one or more towns and cities in nine counties had been completed. All of this was done on a voluntary basis, a fact which it is hoped will lead to the studies being used intensively in those districts where they have been made. Already some assessors are working on methods of using the findings from their ratio studies in the next real estate assessment in 1953. And as the final part of the 1953 assessment, the State Tax Commission will be able to use average ratios as a guide in the required external equalization between counties and cities.

BOOK REVIEWS

Taxation in Canada. By J. HARVEY PERRY. Toronto: University of Toronto Press, 1951. Pp. xiii + 409. $6.00.

The Canadian tax structure, as so many Canadian institutions, has been greatly influenced by both British and American practice and today is the product of the blending of these influences plus many purely Canadian innovations. Particularly in recent years Canada has carried into practice experiments in tax policy which have not advanced beyond the debating stage in other countries. These tax programs have been facilitated by the parliamentary form of government, a strong Government majority in the House of Commons, and a budget situation that encouraged such experimentation. Of particular interest to the student of taxation in the United States are the programs of dividend-credits against personal income tax liability, deferred depreciation designed to restrict investment in nondefense expansions, vigorous use of excise taxes as instruments of inflation control, and long-continued employment of a general manufacturers sales tax. But study of taxation in Canada has long been hampered by the lack of available material. Mr. Perry's volume fills a major need in providing an over-all survey of the Canadian federal, provincial, and municipal tax systems.

The initial chapter provides a brief historical survey; a complete history of the Canadian tax structure, originally intended as a part of this study, is now being prepared by Mr. Perry as a separate volume. The next eight chapters explain the major federal (Dominion) taxes—the personal and corporate income taxes, the successions duties, the sales and excise taxes. After a description of the provincial taxing powers, the major provincial and municipal revenue sources are explained. The last part of the book discusses budgetary procedure, the functions of the Department of Finance, and tax administration at the three levels of government. A comprehensive bibliography completes the volume.

Apart from the innovations mentioned above, there are several features of the Canadian tax structure which are noteworthy. Despite the fact that the income tax structure is in most respects closer to American than British practice, capital gains remain untaxed. The early abandonment of personal property taxes has left the property tax a levy on real property only—in law as well as in fact—except to a limited extent in the Maritimes. The abandonment of provincial use of the property tax parallels American state practice. The Dominion-provincial agreements on income and successions duties represent an advanced approach to intergovernmental fiscal relations, although one which has not been carried out completely. The constitutional prohibition on the use of direct taxes in the provinces has led to the development of various techniques to impose gasoline, tobacco, and retail sales taxes directly upon consumers, although the taxes, as in the United States, are collected from the sellers. The successions duties represent interesting hybrids between estate and inheritance forms. A policy on natural resources very different from that in the United States has resulted in the ability of the provinces to gain substantial revenues from their mineral and forest rights. Finally, the very heavy reliance upon consumption taxation, both on the part of the federal government and to an increasing extent with the provinces, is characteristic of the tax system.

Mr. Perry's volume represents a very useful contribution to tax literature. Within Canada the book should serve as a valuable supplement in university courses in public finance, as well as providing the business and political communities with a convenient means of obtaining an over-all survey of the

tax structure. To persons outside Canada, the book is valuable for an understanding of the major features of the tax structure and as a background for more detailed investigation into aspects of particular interest.

The book is almost entirely descriptive, apart from brief analysis of a few questions, such as the nature of the concept of income. In general, no evaluation or analysis of conflicting issues is presented. These were not objectives of the study; indeed, Mr. Perry's position on the staff of tax experts of the Department of Finance virtually precluded such an approach. The author's long association with tax work during fifteen years with the Department has of course been of great value in giving him a thorough familiarity with the subject; the chapters on administration and legislative handling of tax questions especially benefit from this inside contact.

The task of avoiding factual errors in a study of this type is a tremendous one. In a few cases, particularly with reference to provincial levies, the author is forced to concede that the practice mentioned is " apparently " followed. But these cases are not numerous. In describing the development of the sales tax (p. 20), the author does not point out that at the end of 1922 the change was made from a turnover to a manufacturers sales tax; the principal rate prior to that date was 2¼ per cent, not 4 per cent as indicated. The statement that the present American income tax law makes no specific mention of capital gains (p. 41) is incorrect. On page 50, in the discussion of Canadian income tax rates, it is not made clear whether the surtax for 1951 is 10 per cent of the tax due, or 10 percentage points (actually, the former). In the reviewer's somewhat biased opinion, the description of sales and excise taxation is inadequate in view of their fiscal and revenue importance; the discussion of provincial revenue from natural resources is much more detailed than most sections. But these minor considerations do not detract from the over-all accuracy, readability, and usefulness of the volume.

A word is warranted in regard to the sponsorship of the study; its undertaking and publication were made possible financially by the Canadian Tax Foundation, a nonprofit research organization established in 1946 jointly by the Canadian Bar Association and the Canadian Institute of Chartered Accountants. The Foundation is underwriting the publication of a series of advanced studies of Canadian tax problems, which express solely the views of the authors and in no way reflect the point of view of the officials of the Foundation. It is unfortunate that in the United States the only volumes in public finance which are published without difficulty are text books and tax services; publication of advanced studies which offer the real contributions to the advancement of knowledge rest upon the benevolence of a university press or the occasional willingness of a commercial publisher to publish a " prestige " volume.

JOHN F. DUE

University of Illinois

Municipal Finance—A Report Prepared by the Civic Advisory Council of Toronto. University of Toronto Press, 1950. Pp. 185. $3.50.

In 1948 the City Council of Toronto requested the Civic Advisory Council " to inquire into, and report upon, the nature and extent of the existing fiscal interrelationships of the City of Toronto, with the Province of Ontario and with other municipalities . . . and to make such recommendations, for the information and guidance of the Council of the City of Toronto, as may appear fitting." This book summarizes the report and recommendations of the committee appointed by the Civic Advisory Council.

Toronto is beset by the same complex of financial problems which plague large cities in the United States, and therefore the committee report will be examined with considerable interest in this country. In brief, the recommendations urge a thoroughgoing clarification and restatement of the division of municipal and provincial responsibilities. "A municipality was not designed to play the role of residuary legatee of Dominion and provincial responsibilities or fiscal policies." The committee agreed that the real property tax should not be relied upon "to do much more than meet the normal services which a municipal unit might be expected to perform for its citizens. If services beyond these are undertaken, the continuing balance between municipal expenditures and revenues must come from one or some combination of the following: 1) provincial grants-in-aid; 2) centrally administered, locally shared taxes; 3) allocation to the municipalities of additional revenue sources; 4) assumption by the Province of the responsibility for certain services now paid for either in whole or in part by municipalities." In view of the present movement in this country to broaden the taxing authority of localities, it is worth noting that most committee members were not sanguine concerning the practicability of this alternative.

Second Report on Japanese Taxation. By the SHOUP MISSION. Japan Tax Association, 1951. Pp. 92.

The first report of the Shoup Tax Mission (4 vols.; Tokyo: SCAP, 1949) presented the conclusions and recommendations of the Mission for a complete revision of the Japanese tax system. Unlike that report, the present statement makes no attempt to be comprehensive.

When the Shoup Mission arrived in Japan for the second time, the new national tax system had been in force for some months, but the new local tax system had been enacted by the Diet only the day before. Nevertheless, despite the country's lack of experience with the new taxes, the Mission found no lack of issues to study. There had been a year of intensive debate throughout Japan over the recommendations submitted the previous year, and a considerable part of the report is addressed to the new issues that were developed during this debate.

In addition, the present report appraises the limited experience already gained under the new national tax system and analyzes the chief problems likely to arise in the immediate future. One of the most important problems foreseen by the Mission concerned the uses which might be made of the prospective national surplus. In order to forestall the possible enactment of unduly high and unfair local taxation, the Mission recommended that at least half of the prospective surplus be used to increase the national equalization grant to localities. It was further recommended that farmers and fishermen be given a 10 per cent earned income credit to more nearly equalize the treatment given regular employees; it was estimated that this would absorb perhaps one-sixth of the surplus. Finally it was recommended that the allowance for dependents (under the income tax) be increased to absorb the balance of the surplus. It was hoped that the latter two moves would improve taxpayers' compliance; a large part of the present report is, in fact, devoted to the problem of devising ways of ensuring that other self-assessed groups pay the full amount of the tax they owe.

Should the surplus exceed the estimate upon which the above recommendations were based, the Mission recommended a general decrease in income tax rates and an increase in the basic exemptions.

NTA NOTES

Nomination of Officers. The by-laws, as revised at the Dallas meeting on November 29, 1951, change the method of nominating the President, Vice President, Secretary, Treasurer, three members of the Executive Committee, and two honorary members of the Executive Committee from the Dominion of Canada each year.

The revised by-laws declare, "The Nominating Committee shall submit its nominations to the Secretary at least ninety days before the annual meeting of the Association and the Secretary shall include the same in the sixty day notice of each annual meeting when such nominations shall be voted upon."

G. Howard Spaeth is the Chairman of the Nominating Committee this year. Other members are James W. Martin, Louis Schreiber, Eugene G. Shaw, and John P. Morgan. The Committee plans to meet early in June. Suggestions for nominations may be sent to the Chairman or any member of the Committee.

As in the past, nominations may be made from the floor at the time of the annual meeting. However, the members of the Association will now know well in advance of the meeting the names proposed by the Nominating Committee.

Toronto Program. Plans are being formulated for an outstanding Annual Conference at Toronto on September 9-12 under the direction of Dean Robert S. Ford of the University of Michigan as Chairman of the Program Committee and Philip T. Clark, Controller of Revenue of the Province of Ontario, as Chairman of the Local Arrangements Committee.

The conference is scheduled to begin on Tuesday this year rather than Monday. It was concluded by the Executive Committee that a Tuesday start would keep you from your desk no longer than the traditional scheduling and that it had some advantages, especially for those of you who want to take wives or other members of the family by air.

Reservation cards for the headquarters hotel, the Royal York, will be sent you well in advance of the conference. Meanwhile, it well be helpful if some of you who are traveling alone can arrange to share a room with another member. More details will be published in the June issue of the *Journal.*

Membership Campaign. The Association is experiencing a steady increase in membership, thanks to the efforts of Walter Walsh, retiring Chairman of the Membership Committee, and those who have assisted him. Kenneth W. Gemmill is the new Chairman. The assistance of the members in securing new members and promoting the activities of the Association will be greatly appreciated.

Meeting of Executive Committee. The Executive Committee put in a full day of work on the business of the Association in Philadelphia on February 9. It discussed plans for the forthcoming Toronto Conference and the work of the various committees of the Association, made arrangements for the amendment of the Certificate of Incorporation to conform with the revised by-laws, and studied ways and means to improve the program of Association activities. Plans were advanced for an effective study of personal property taxation. Thought was given to possible regional meetings of members of the Association, a subject which will require further study. Because of the numerous Association matters requiring attention, another meeting of the Executive Committee is being scheduled for this spring.

ALFRED G. BUEHLER
President

EDITOR'S NOTE: Lack of space in this issue has forced us to omit the rather extensive list of new members who have joined the Association during the last quarter. This list will be carried in the June issue.